Industrial Equipment News

FOUNDED 1933

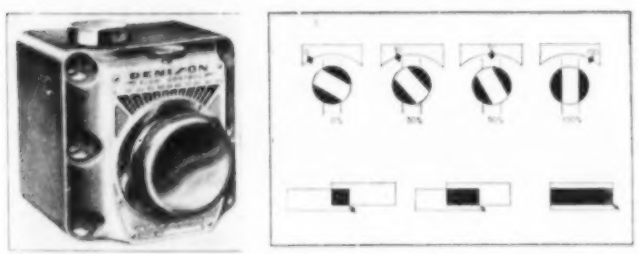
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 3631**

VALVE . . Hydraulic throttle unit for pressure lines to 3,000 pounds

Source: DENISON ENGINEERING CO.
1158-62 Dublin Road, Columbus 16, Ohio



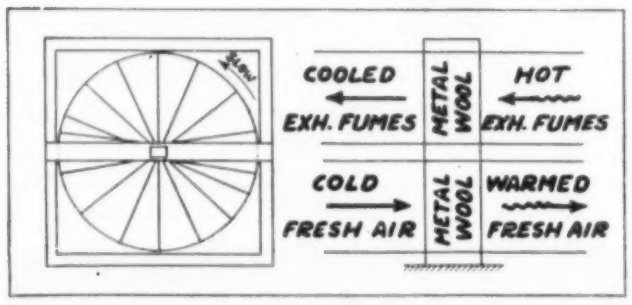
User can select the range

Oil flow can be adjusted in two ranges through this new valve. One is by turning the knob through an arc to set the plug port at an angle with the flow stream. The other is by releasing a screw and threading the plug outward or inward, through 180-deg. increments, to decrease or increase the port dimension axially. Three valve sizes are ¼ to ¾ inch. Minimum range is 0.5 to 5 gpm. Maximum is 4.5 to 28 gpm. The valve is made in two and three-port design.

If you write maker identify as **IEN - 3632**

HEATING . . Wheel type exchanger recovers heat from fume exhaust duct

Source: THERM-O-WHEEL INC.
95 Liberty St., Room 1207, New York 6, N. Y.



Pennington patent

Heat that is normally lost from a building to the outside air through ventilating and process exhaust ducts can be recovered and returned by application of this new Therm-O-Wheel. It consists of a slowly rotating cylinder fitted with radial partitions and filled with metal wool. It is mounted on anti-friction bearings in a rectangular housing and is driven by a small motor. Five sizes measure 53 by 26 by 53 in. to 128 by 26 by 128 in. and rate 3,000 to 20,000 cfm. Diameter of the wheel is 48 to 120 inches.

Installation is made with connection to the upper half of the housing on one face so hot exhaust fumes will pass through the wheel as it turns slowly. A second duct carries the fumes away to an outside exhaust. The metal wool picks up the heat and holds it while the heated portion rotates down to the lower section. At this point are connections, on the reverse side, for incoming outside air and, on the forward side, for delivery to the room or to another duct to carry the air to a point of distribution. This air picks up the heat from the metal wool as it passes through the wheel. Heat recovery can be to 96 per cent and will approximate 90 per cent.

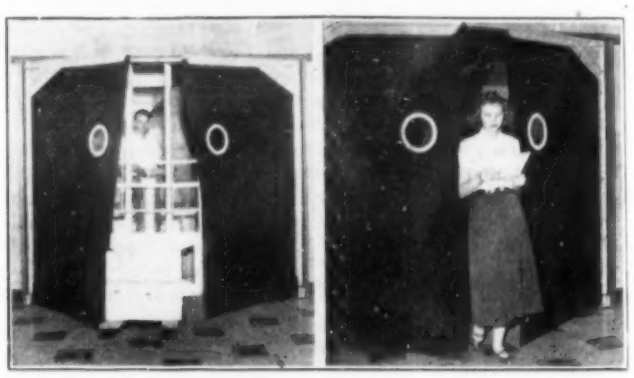
FIGHT CANCER GIVE
American Cancer Society

HELP FIGHT CANCER

If you write maker identify as **IEN - 3633**

DOOR . . Flexible rubber panels to hinge in plant traffic openings

Source: CANDOR ENGINEERING CO.
P. O. Box 210-A, Montclair, N. J.



Protects workers, equipment and itself

Neoprene is recommended for the rubber fabric panel of this new flexible hinged door. The panels are supplied in standard 3/16 in. thickness with two center layers of cotton duck. They are secured in formed steel frames forming inverted L's on the two sides of the door opening.

Vertical tubular sections enclose double acting spring mechanisms that bring the panels to closed position. Sizes are standard at 7 by 7 ft. and 8 by 8 feet. Windows are of Plexiglas plastic about 7 in. in diameter.

If you write maker identify as **IEN - 3634**

PACKAGING . . Coated wrapping paper seals products, sticks to itself only

Source: SHERMAN PAPER PRODUCTS CORP.
1418-22 Oak St., Newton Upper Falls 64, Mass.

Clean, strong

easy to use

Spot-Seal is a new dust proof, water repellent, tamper proof coated paper to wrap around a product, or group of parts, and seal them in by pressing the edges of the paper together. The coated face of the paper adheres tightly to itself but not to the enclosed product. It is suited to package small parts, sub-assemblies or loose parts to be shipped as a single package.

It protects finished surfaces from scratches, fingerprints. It requires no ties or fastenings. Production is in plain or printed rolls, 600 ft. in length by 12 to 48 in. in width.

If you write maker identify as **IEN - 3635**

CLEANING . . Liquid to spray on product, machines, tools, buildings

Source: KELITE PRODUCTS INC.
1248-52 N. Main St., Los Angeles 12, Calif.

No heat, odor or fumes

Spray White is a new liquid cleaning material for use with a refillable air pressurized container. Most cleaning work can be completed by spraying on and wiping off the liquid. It will remove marking inks from metal sheets. It will clean oil and grease from small parts or sheet surfaces. It will remove oil, grease, gum, soaps, compounds and encrusted dirt from shop equipment. It will clean greasy concrete floors, lighting fixtures, lavatory basins, linoleum, tile, terrazo, chromium.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

APRIL, 1953
VOL. 21 No. 4

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- ☐ *Engineering, Mr.* ....
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If you write maker identify as **IEN - 3636**

HANDLING . . Wire rope sling adjusts itself and locks to carry load

Source: CALDWELL CO.
1828-32 Camp Ave., Rockford, Ill.

The load lifts level

The wire rope in this new design of the company's Adjust-A-Leg equalizing sling rests in the V-groove formed by the cheek plates making up the sides of the head assembly. The rope pulls one way or the other to equalize tension in the two legs as the operator takes up slack. Then it is drawn into the groove to depress a spring mounted roller that locks it against further end movement.

Nine sizes rate ¾ to 28 ton. Factor of safety is 5 at a 45 deg. angle. About 65 per cent of the rated load can be carried on one leg without slipping after the slack has been taken up and the roller depressed. The rope is free to move in the head when the load is released. Designation is Model 52.

If you write maker identify as **IEN - 3637**

ROCK DRILLING . . DC. arc torch pierces concrete, masonry, refractories

Source: EUTECTIC WELDING ALLOYS CORP.
40-42 172nd St., Dept. P, Flushing 58, N. Y.

Dynarc booklet upon request

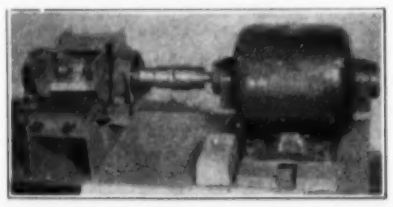
An arc flame with temperature to 8,000 deg. F. and length from 5 to 8 in. results instantly upon closing the circuit from a dc. welding machine to the new patented Dynatrode double conductor coated electrode. The flame can be employed to burn through concrete, masonry, refractories in seconds from the time of contact. It will penetrate to about 6 in. at 1 to 3 ipm. depending on the material and power back of the arc.

The electrode applies in a special holder that takes a double conductor welding cable from the arc machine and back again. The arc is established between the ends of the two parallel conductors in the electrode structure. Dynarc Process is the trade name.

If you write maker identify as **IEN - 3638**

SHEARING . . Motor driven machine cuts up edge trim from a slitter

Source: TAYLOR STILES & CO.
44 Bridge St., Riegelsville, N. J.



Helps scrap handling

New machine consists of a double knife ball bearing rotary head and a motor with mounting on a steel base. Two of the machines, one right hand and the other left hand, apply on the two sides of material feeding from a slitting machine. They cut the side trim into short lengths for convenient handling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3639**

This ball bearing screw jack is only 7 inches high—can lift 15 tons 2½ inches. It weighs 22 lbs.

Designed especially for those hard-to-get-at-spots too small for a big, heavy jack—the Duff-Norton "Shorty" has made friends in shops, mills, shipyards, and on construction jobs.

For complete specifications on the "Shorty" and other dependable Duff-Norton Journal Jacks, write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD12 M, The Duff-Norton Manufacturing Company, P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON Jacks

"GIVING INDUSTRY A LIFT SINCE 1883"

If you write maker identify as **IEN - 3640**

For Engineers only . . .

• Full color print of original water color painting by prize winning artist Ted Kautzky, plus helpful decimal equivalent chart for your wall. Compliments of New Departure Ball Bearings, while the supply lasts. Address: Advertising Department, New Departure Division of General Motors, Bristol, Connecticut.

NEW DEPARTURE BALL BEARINGS

If you write maker identify as **IEN - 3641**

FAST!

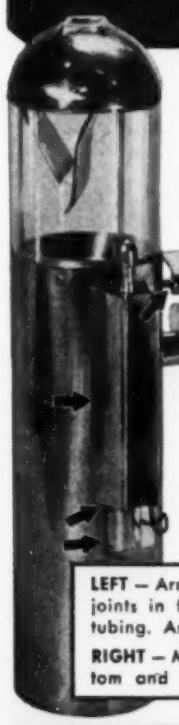
Your fastest move against fire is with a Kidde carbon dioxide extinguisher. No groping. No fumbling. Just pick up and go! Trigger control assures split-second action.

Kidde

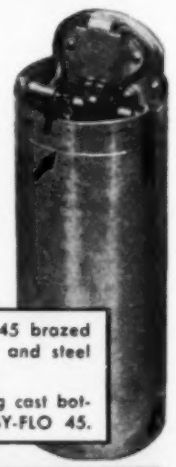
Walter Kidde & Company, Inc.
436 Main St., Belleville 9, N. J.

If you write maker identify as **IEN - 3642**

Best by test—"brazing with EASY-FLO 45"



That's what Diamond Sales Co., Kansas City, says about the assembly of their bus and streetcar fare box. Here's the complete quotes—*"We tried every known method of welding and soldering and find that brazing with EASY-FLO 45 is best. It is as strong as the parts themselves and warping is held to a minimum. It is cheaper for us and saves us money on the clean up job and takes a good plate."*



GET BULLETIN 20

It tells how brazing with EASY-FLO 45 silver alloy makes high-strength, shock-and-vibration-proof joints with amazing speed and economy. Write for a copy.

LEFT — Arrows mark the four EASY-FLO 45 brazed joints in fare box made of heavy brass and steel tubing. Assembly is chrome plated.

RIGHT — Money vault is made by brazing cast bottom and top to brass tubing with EASY-FLO 45.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 3643

IF YOU HAVE AIR OR MATERIALS TO EXHAUST—

"Buffalo" INDUSTRIAL EXHAUSTERS

will give you lowest cost year-in, year-out service

An industrial exhauster is a hard working fan! It has to be tough, and it has to be efficient. "Buffalo" Industrial Exhausters are both. Their heavy-gauge steel plate housings and blades are welded — not riveted — giving them overall strength plus the efficiency of smooth, rivet-free interior surfaces. And the thousands in use are saving their owners on maintenance, replacements and power! Write for BULLETIN 3567 today.

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ontario
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 3644

securityflex* saves money...

and because of its strength, toughness, and wear-resistant properties, this heavy-duty portable cord needs fewer replacements—lowers maintenance costs. 58425

*Trademark

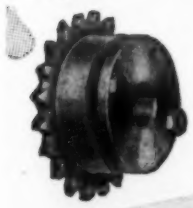
Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

the right cable for the job

ANACONDA® wire and cable

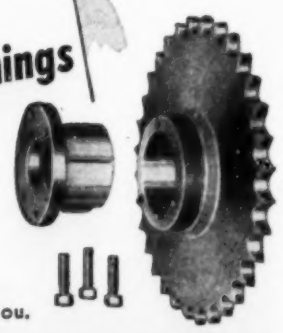
If you write maker identify as IEN - 3645

Browning SPROCKETS



OFF-THE-SHELF
READY-FOR-USE
A Time and Money Saver with

Split Taper Compression Bushings
• NO REBORING
• NO WELDING



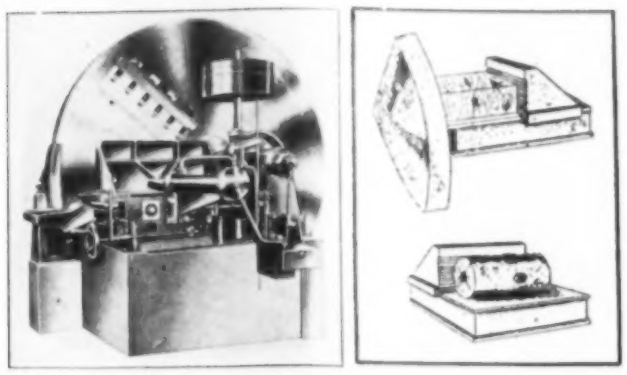
Write for Catalog CD 101.
There's a Browning Distributor near you.

BROWNING MANUFACTURING COMPANY MAYSVILLE · · · KENTUCKY

If you write maker identify as IEN - 3646

WOOD WORKING . . Slicing machine cuts logs and timbers into boards

Source: PLYCOR CO.
563-67 W. Washington Blvd., Chicago 6, Ill.



Made in Germany

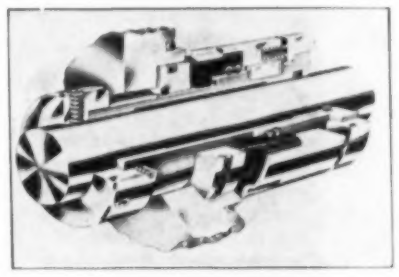
Largest of three assemblies in this new rotary slicing machine will cut a 20 by 24 by 48-in. log, timber, or equivalent pile of lumber, into pieces of any desired thickness from 1/32 to 5/8 inch. Cutting action is by two knives mounted radially in a disc which rotates at 60 rpm. Thus the machine will produce 120 cuts per minute. The cut pieces are discharged from the disc face through which they move as they are cut. Smallest of the three machines operates at 110 rpm. to make 220 cuts per minute. Its maximum cutting length is 16 inches.

The wood to be cut is steamed and then placed on the machine table between the cutter disc and a toothed hydraulically operated plate. This plate moves in as the cutting proceeds until it reaches a stop position. At this point the machine is stopped and the plate is retracted to clear a new load. Adjustment for cut thickness is within the disc at the knife positions. The machine makes no sawdust.

If you write maker identify as IEN - 3647

SEALING . . Self-contained assembly prevents axial leakage along a shaft

Source: CRANE PACKING CO.
1815 W. Cuyler Ave., Dept. I-6, Chicago 13, Ill.



Pressure balanced

Type 8-B is a new special purpose assembly for pressures to 1,000 lb. in the company's line of mechanical shaft seals. It is available for specified installations on shaft sizes from 1/4 to 6 inches. It is suited particularly for heavy duty pumps and can be employed in a split-case pump without lifting the upper half of the housing due to its pre-assembly on a shaft sleeve.

O-rings seal between the sleeve and shaft and also between the sleeve and the washer that rotates with it. This washer forms one side of the sealing member and rides against the lapped face of the stationary seat. The seat is cushioned with an O-ring in the end plate and the latter is sealed with one that bears against the machine housing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3648

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO SAFETY PARTS LIFTER

Speeds up the job on parts that are difficult to handle with the fingers. Practical for flat or curved surfaces, damp or oily parts. Instantly affixed or released at the option of the operator. Cup diameter 2½", length over all 15".

WRITE FOR BULLETIN NO. 51

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 3649

LUBRICATION ECONOMY

"THIS LUBRICANT reduces Service Calls!"

The sales director of the Lynch Corporation, manufacturers of the MORPAC forming and wrapping machine, writes us: *"Our Service Engineers can readily spot machines that have had other than LUBRIPLATE Lubrication, as these machines do not give the service they should."*

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 3650

Top-liner for Top Designers

PUSH BUTTON CASTELL LOCKTITE HOLDER AND CASTELL IMPORTED LEAD

- One-hand clutch operation avoids touching lead, smearing fingers or drawing.
- Exclusive collet holds lead in bulldog grip, prevents it slipping back into holder
- Clean, balanced, efficient for every type of drawing, sketching, rendering, coloring.

CASTELL Imported Lead

18 degrees, 7B to 9H—gives more prints — cleaner and sharper prints — than any other drawing lead. Lasts 25% to 33⅓% longer. Black or colored. Your Drawing and Art Supply Dealer has them.

CASTELL
the drawing pencil with the Master Degrees

A.W. FABER-CASTELL
PENCIL COMPANY, INC. NEWARK, N. J.

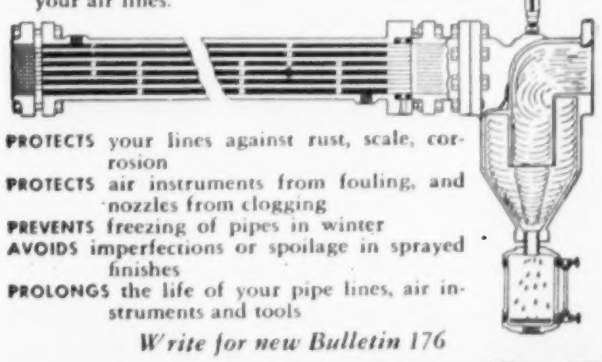
If you write maker identify as IEN - 3651

You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons
1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS** Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 3652

Moly-sulfide
A LITTLE DOES A LOT

shows up best where the frictional conditions are difficult

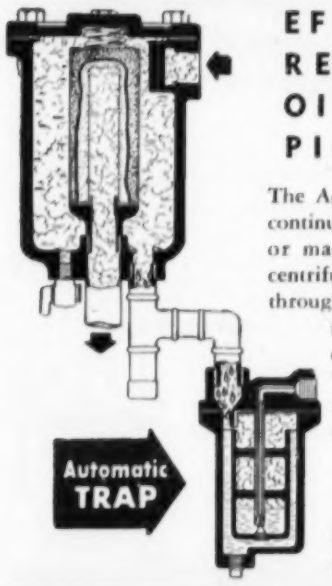
The case-histories of 154 difficult friction problems in the shop and in the field, all successfully solved, are described in a new 40 page booklet. It is where conditions are extreme that *Moly-sulfide* excels over other lubricants. If you encounter extreme conditions of pressure, temperature or velocity, send for this free booklet.

Climax Molybdenum Company
500 Fifth Avenue · New York City · 36 · N·Y

MS-9A

If you write maker identify as IEN - 3653

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER, PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

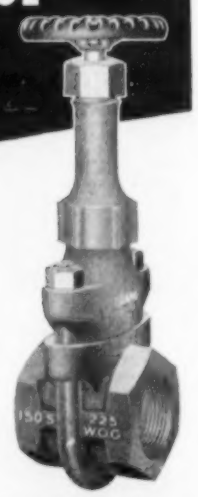
Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN - 3654

FOR BETTER CONTROL IN THE TIGHT SPOTS



CRANE IRON BODY CLAMP GATE VALVES

Here's an inexpensive, versatile gate valve with a special talent for tight places. It's unusually compact and extra sturdy. You can use it for steam, hot and cold water, for crude, fuel and lubricating oils, and for gas and gasoline services. All-iron inside screw valves have one-piece, free-draining bonnet. Ideal for handling heavy, sticky fluids. For inspection or cleanout, the bonnet assembly and wedge disc lift out easily—the body stays in the line. And you'll have no trouble in reassembling—the bonnet joint always makes up tight and stays tight.

Send for Folder AD 1667 or ask your Crane Representative for full details.

Crane Wedge Disc Clamp Gate Valves come in OS&Y, inside screw, and quick-opening patterns, all-iron or brass trimmed. Sizes up to 4 in. Working pressures up to 150 psi saturated steam.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

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VOL. 21 APRIL, 1953 No. 4

Wanted - Engineers

Each time you create a new product you also create a situation. Immediately you make it imperative that others in your line of work take similiar steps if they wish to stay in business. You open the way, at the same time, for additional products supplementary to your own. You go along on your new course until someone makes a better product and you must start again.

Some call it technological improvement. Some have coined the word, automation. Whatever you wish to call it, you are surrounding our every activity with things, large and small, to which we can look to do most anything we want done. Some among you are going further with new things of which we have not even dreamed. Tomorrow we will count them as commonplace and expect you to have service men handy to keep them going.

All of these things have one weakness in common and therein lies the situation. They cannot think or talk for themselves. For every new product there must be one, or several, or many men and women qualified to judge ability, to select, install, operate, maintain, scrap and replace, as well as create. They are the engineers of today and tomorrow. Perhaps they would not be in such current short supply had we recognized that weakness.

So you can see the seriousness of the present situation we quote from a statement by Chester H. Lang, Vice President of Public Relations for General Electric.

"There is currently a shortage of 40,000 engineers. The annual need is for 30,000 new graduates per year to fill industry's needs alone. Graduating classes will not turn out enough engineers in the next four years to average one-half this annual need. The situation becomes still more critical when it is realized that the military will also be drawing heavily on them."

You can help your own company, and industry in general, by taking an active part in the program that has been instituted by the Engineering Manpower Commission of the Engineers Joint Council. It has published a 24-page booklet, "How Your Company Can Help Promote Engineering as a Career." This booklet is available on request to The Advertising Council, 25 West 45th St., New York 36, N. Y.

The booklet tells you what the problem is and the important part you can play in solving it. It outlines the advantages of an engineering career to help your company develop advertising appeals. It informs you on the current activities of industry in the education and recruitment of engineers. It suggests things you can do with your present manpower. It provides material you can use in your own programs.

A good many manufacturers are using the booklet now to help orient their engineer recruitment advertising to industry-wide recruiting programs. Ask for it.

Pick up any engineering school publication and look through the advertisements. Here's just a partial sample from the Cornell Engineer—"Five paths to your success at Detroit Edison," "Allison Engineering is looking for young men with degrees," "What Phillips Petroleum can offer the technical graduate," "Opportunity exists at Monarch Machine Tool," "Supervising production at DuPont."

W. E. Irish.

If you write maker identify as IEN - 3655

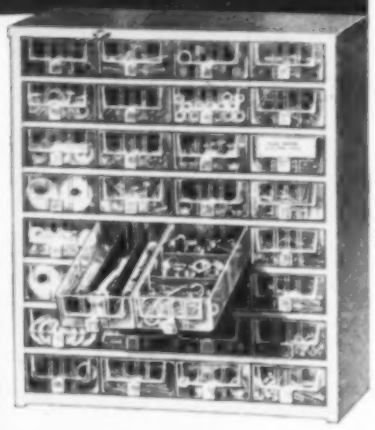
HAS EVERYTHING!
HANDIEST CABINET EVER MADE FOR STORING SMALL ITEMS

"HAZ-BIN, JR."
SUCCESSOR TO "JIFFY" CABINETS

Contents visible! Lifetime-guaranteed, crystal-clear plastic drawers. Strong all-steel cabinet has individual drawer guides. Baked-on silver-gray hammer finish. Sent complete with index cards, removable lengthwise and crosswise drawer dividers, rubber feet.

32-DRAWERS (96 compartments)
15⅜" high
6" deep
12½" wide
$12.95

Lifetime Guaranteed CLEAR PLASTIC DRAWERS
Drawer size for all models—2-3/4" wide, 1-7/16" deep, 5-7/8" long.



Made in 9 Sizes:

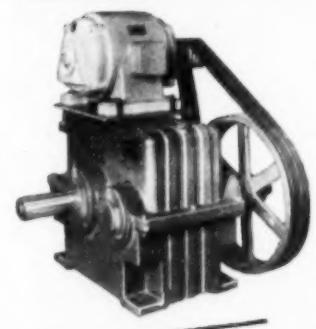
J-128	128 drawer	(384 compartments)	$55.95
J-96	96 drawer	(288 compartments)	42.95
J-64	64 drawer	(192 compartments)	24.95
J-48	48 drawer	(144 compartments)	20.95
J-32	32 drawer	(96 compartments)	12.95
J-24	24 drawer	(72 compartments)	10.95
J-16	16 drawer	(48 compartments)	7.75
J-12	12 drawer	(36 compartments)	5.95
J-8	8 drawer	(24 compartments)	4.25

AKRO-MILS, INC.
Box 989-N
AKRON 9, OHIO

10 DAY FREE TRIAL! SEND NO MONEY!
SEND FOR FREE DESCRIPTIVE FOLDER

If you write maker identify as IEN - 3656

SACO SPEED REDUCERS



SIMPLIFY DRIVE PROBLEMS

Adapt standard motors to the best speed for every job. Any reduction ratio between 10 to 1 and 60 to 1 is possible with a Saco Reducer by an easy change of sheaves on the V-belt drive.

Almost any full speed motor can be mounted on top or end of reducer. Pivoted motor base permits easy adjustment of belt tension, saves floor space and simplifies installation. Steel helical gears and ball bearings give long life and top efficiency.

The wide range of output speeds possible with a Saco Speed Reducer will allow the use of standard, full speed motors on a wide variety of jobs.
Two reductions attained (1) through V belts, (2) through steel helical gears.

Write for Catalog 643

STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Variable Speed Reducers · SealMaster Ball Bearings · Car Pullers · Winches · Saco Speed Reducers

231 RIDGEWAY AVE., AURORA, ILL.

If you write maker identify as IEN - 3657

SAVE UP TO 85%
WAR SURPLUS SAVINGS

STAND MAGNIFIER
Handy stand magnifier with universal adjustments. Overall height: 6". Has powerful, clear magnifying lens. **1.49**

MAGNETIC BASE-INDICATOR HOLDER . . .
A time saver for precision checking. Magnetic base fits curved or flat surface. Has 45-50 lb. pull. Stainless steel 6½" rod mounted in ball socket permits universal settings . . **3.95**
Note: We have complete line of instruments, depth gauges, inspection mirrors, etc. WRITE TODAY

GEAR HEAD MOTORS
Heavy duty, G.E. Gear Head motor. 2 HP, 24V. DC, 125 amp., reversible motor drives a reduction gear unit giving 36 to 1 ratio at take-off. Also will operate on 6 or 12 volts.
MOTOR ALONE 9.95
GEAR BOX 7.95
36 to 1 G.E. (306 shaft RPM)
28 to 1 Eclipse (130 shaft RPM)
40 to 1 Eclipse (110 shaft RPM)
10.95 EA.

ELECTRIC ACTUATORS
Hundreds of uses for any mechanical device needing controlled 2 way action. Opens, closes, raises or lowers doors — windows — gates — valves. CTU-2 — Ponie Linear Actuator — 24 volt, DC, 8300 RPM, 1/6 HP — series wound motor. 4½" stroke in 13½ sec. Compression and tension loads up to 750 lbs. Adjustable micro switch for limits of travel. Overall lngth., retracted 11" **7.95**
We also carry many more sizes and types of Actuators. Write today for information.

230 Pg. CATALOG
Amazing Values! 1000's of items for Mfgr., Mechanic, Sportsman, etc. Save on Machine Tools, Hydraulics, Pumps, Valves, Hand & Power Tools, Instruments, etc. Send for your copy today!

NEW INSIDE - OUTSIDE VERNIER CALIPERS
German made by one of Europe's leading specialists in precision tools. Measures inside-outside & depth in .001" to 6" in 1000ths and 1/10mm to 150mm in 10ths. **9.75**
MICROMETERS — 0" to 1" in 1,000ths. **9.75**
Has lock-nut & ratchet ...ONLY — . . .

BENDIX HYDRAULIC PUMP & MOTOR
Has 3-1/2 GPM capacity at 600 PSI. Motor is 1½ HP, 24V, D.C. Will operate, on either 12 or 32V, DC current. Has built-in, relief valve adj. to 1500 PSI. This unit ideal for hyd. lifts, portable loaders, etc. **19.50**

HYDRAULIC HAND PUMP
Operating pressure 2000 PSI. Cap., 1.5 cu. in per complete cycle . . **12.75**

HYDRAULIC ACCUMULATORS
A-2B FLOATING PISTON TYPE — 4"x 18" Built to stand 2,000 PSI **12.75**
A-5 VICKERS — 10" dia. Ball type. Built to stand 2000 P.S.I. **24.75**

HYDRAULIC CYLINDERS
Gives 20,000 lbs. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lbs. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore; 18" stroke; 30½" length. Ideal for road farm — shop machinery. **29.95**

No. 2 HYDRAULIC CYLINDER
Double action. Bore is 1" — Shaft ½". Has stroke of 2½" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1500 lbs. continuous duty. 3000 lbs. intermittent. Will lift or push up to 1100 lbs. **5.75**
We stock over 30,000 Hydraulic Cylinders, Valves, Pumps, Accumulators, Hand Pumps, Motors, Hose, etc. All at Money Saving Prices.

PALLEY SUPPLY CO.
2263 E. VERNON AVE.
IN-4
LOS ANGELES 58, CALIF.

Order from this ad. Pay by M.O. or check. P.O's. accptd from D&B firms. ½ deposit with C.O.D's.
All Prices F.O.B. Los Angeles

If you write maker identify as IEN - 3658

FLEXIBLE COUPLINGS

Soundly engineered, LOVEJOY Flexible Couplings provide maximum alignment correction for smooth power transmission. Vibration, starting torque and shock of intermittent loads are dampened and absorbed. Operational efficiency and economy is increased, motor and machine protected — their service life lengthened. The end result is not only a more profitable, but an improved finished product.

There is a LOVEJOY Flexible Coupling for every requirement. Cushions are made of materials best suited to the load conditions.

Write today for Catalog and Handy Selector Charts

LOVEJOY FLEXIBLE COUPLING CO.
5014 W. LAKE STREET CHICAGO 44, ILLINOIS
Also Mfrs. of Lovejoy Universal Joints and Variable Speed Transmissions

If you write maker identify as IEN - 3659

MATERIAL STOCK PILES

(1) Shows volume of material piled by conveyor only. (2) Shows additional storage volume provided by conveyor mounted Swivel-Piler.

10 Times Bigger

from One Conveyor Position!

USE THE

S-A SWIVEL-PILER

The Stephens-Adamson Swivel-Piler mounts on the end of your fixed or portable conveyor . . . hurls up to 50 tons per hour of materials up to 20 feet in any direction. This makes possible stockpiling of up to *ten times* the amount of material handled by the conveyor only from one position. Materials handled include coal, lime, salt, sulphur, ammonium sulphate, clay, borax and similar bulk materials up to 2" lump size. Investigate this cost-cutting timesaver today.

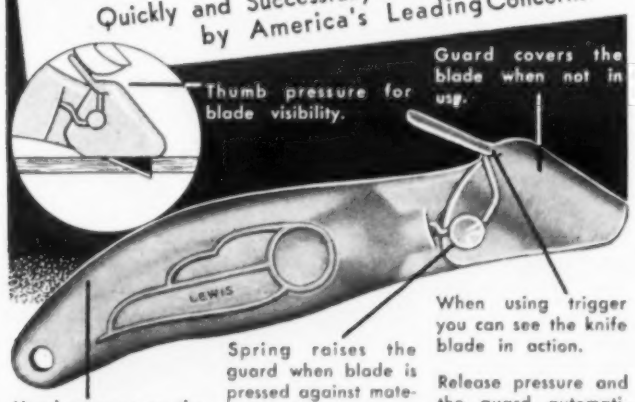
MAIL COUPON TODAY for full information with photos and diagrams.

STEPHENS-ADAMSON MFG. CO.
Merchandising Division
231 Ridgeway Ave., Aurora, Ill.
Please send me:
☐ Bulletin 650 on Conveyor Mount Swivel-Piler
☐ Bulletin 550 on Wheel Mount Swivel-Piler
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 3660

NEW! LEWIS AUTOMATIC TRIGGER ACTION SAFETY KNIFE

Quickly and Successfully Adopted for Use by America's Leading Concerns



No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

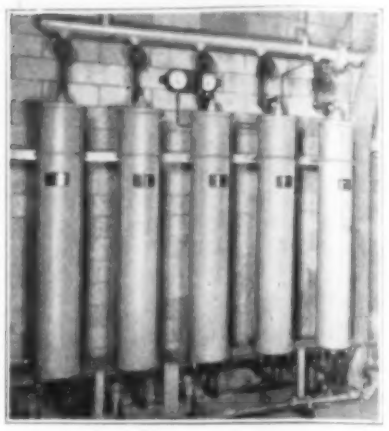
Retail Price $1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 3661

SEPARATING . . Coil and filter to dry and to clean compressed air

Source: HANKISON CORP.
184 Biltmore Bldg., Pittsburgh 16, Pa.



Instrument quality air

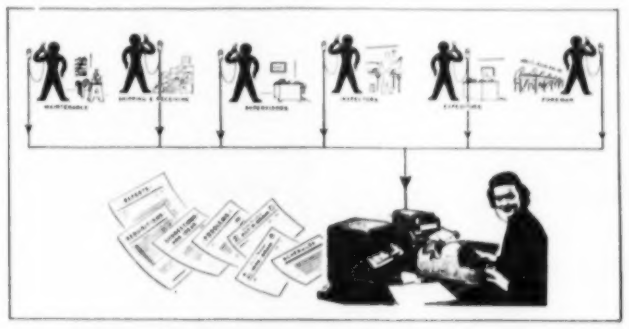
Illustrated is a multiple assembly of the company's new Model A-100-D Condensifilter, previously described IEN-973-53. Individual capacity of each of the new units is 100 cfm. at 100 pounds. Any number can be assembled in parallel for a required greater air handling ability. The equipment is suited particularly for use as a pre-filter to serve desiccant type dehydrators. It also is suited to supply clean dry air to tools, gages and laboratory equipment.

Compressed air enters through a pipe connection at the bottom of the assembly to move upward around the coil in which cold water is circulated from a shop source. Dehydrated air continues upward to pass through the filter cartridge and issue from the pipe connection at the top of the housing. Moisture collects in the bottom of the housing and is discharged at intervals by a snap action spring-backed float trap. No service attention is required for a considerable period of action. The filter cartridge can be replaced.

If you write maker identify as IEN - 3662

TELEPHONE DICTATION
Replaces "paper work" by department heads

Thomas A. Edison Inc.
49-53 Lakeside Ave., West Orange, N. J.



Ask for "A Report on Industrial Televoice"

"This is John Brown, Department 40, 10:30 AM., I will need 500 of part 89257 by 3 PM. tomorrow to complete Job 246."

"This is Jim Jones, Department 32, 11 AM., Tool No. 1639 was broken on Job No. 430, has been sent to tool room."

"This is Joe Smith, Department 21, 2 PM., Make out a safety report on Arthur Robins, Clock 8340. This man was injured at 1:49 PM. when . . ."

There you have just three reports "talked" by department heads into their Industrial Televoice phones from their offices in the plant to the central transcriber. There the messages were typed and routed for action and for the records. Only the typist did any actual "paper work".

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3663

TROMBETTA SOLENOID CORP.

331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-300 LINE OF BRAKES

Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES

(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

See McGraw Hill's Prefiled Electrical Catalogs. Write for Additional Information.

If you write maker identify as IEN - 3664

Industry's Most Versatile Heat Source

CHROMALOX *Electric* **Strip Heaters**

EASY TO INSTALL Chromalox Strip Heaters give dependable accurately controlled heat where and when heat is needed. They produce uniform and exact temperatures by automatic or manual controls. Low initial installation and operating costs are among their many advantages. Get details now about Chromalox Heaters for heating liquids, gases, platens, molds, moving parts, etc.

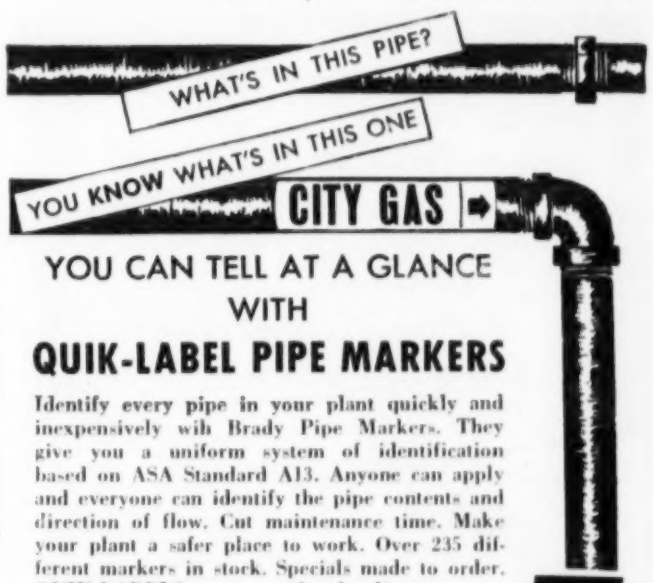
Write for Catalog 50

It describes many Chromalox Electric Heaters and tells how to apply them.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Electric Radiant Heaters Advertisement, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 3665



YOU CAN TELL AT A GLANCE WITH QUIK-LABEL PIPE MARKERS

Identify every pipe in your plant quickly and inexpensively wih Brady Pipe Markers. They give you a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order. QUIK-LABELS come on handy dispenser cards. They are printed in large black letters on approved ASA background colors. Applied in a jiffy — they stick without moistening. Use indoors or outdoors. Cost only a few cents per marker.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS

W.H. BRADY COMPANY
734 W. GLENDALE, MILWAUKEE, WISCONSIN

If you write maker identify as IEN - 3666

Fast Motor Service

Factory approved motor service in every industrial area from 97 Allis-Chalmers Certified Service Shops

ALLIS-CHALMERS CERTIFIED SERVICE SHOPS are independent service shops which meet rigid standards for ability, experience, equipment and business integrity. They use factory approved methods and parts and do your work promptly at a fair price.

Of course, Allis-Chalmers Certified Service Shops give good service on any electrical equipment, of any make. To find the Certified Service Shops in your area, call your nearby Allis-Chalmers District Office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3867

ALLIS-CHALMERS

If you write maker identify as **IEN - 3667**

If you write maker identify as **IEN - 3668**

If you write maker identify as **IEN - 3669**

If you write maker identify as **IEN - 3670**

TRUCK . . Carries ladder, tools, supplies for maintenance operations

Source: STAHL METAL PRODUCTS INC.
3488-92 W. 140th St., Cleveland 11, Ohio

Work shop on wheels

Shopmobile is a new three-wheel truck equipped with a 24-ft. extension ladder, stabilizing feet, trays, drawers, shelves and a main materials carrying center compartment. It is fitted with a towing hook and a retractable caster-type front wheel. A hand brake locks the wheels, all of which are mounted on pneumatic tires. The unit can be rolled to a job, carrying the tools, supplies and parts required. Approximate list price is $800 with specified finish, lettering, ladders, vises, stabilizer jacks among the equipment.

If you write maker identify as **IEN - 3671**

METAL . . Copper clad steel for spring and conductive qualities

Source: GENERAL PLATE DIVISION
70 Forest St., Attleboro, Mass.

Sample card upon request

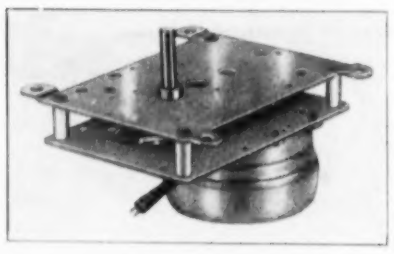
Copper is clad on one or both sides of a hardenable carbon steel in manufacture of the company's new Conflex composite metal. Widths are available to 8 in. with thickness from 0.05 in. down. Cladding is in varying thickness ratios such as 10/80/10 for double cladding and 80/20 when the copper is on one side only.

The metal is supplied soft for fabrication. Spring characteristics are imparted by heat treating with procedure similar to that used for the steel itself. Electrical conductivity is about 30 per cent as compared to solid copper in the 10/80/10 material. Typical applications are in thin blade springs, electrical connectors, pen and pencil clips, fuse clips.

If you write maker identify as **IEN - 3672**

INDEXING . . Geneva mechanism and motor for intermittent rotation

Source: HANSEN MFG. CO.
1932-36 Virgil Blvd., Princeton, Ind.



Stops and locks

Stop-N-Go is a new miniature indexing mechanism measuring about 3¼ by 2 in. including its 8 in. oz. motor which operates at 1 rpm. on 110-volt or 220-volt ac. The assembly was developed initially for rotating table displays. It is available in four designs including three to six stop-and-go intervals in a revolution. Total stand still interval is twice total motion interval.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3673**

• You've known and used them for years. You've learned to prefer them for their enduring strength and rigidity in all types of load-bearing and load-carrying service. Now they come to you under a new name . . . "Republic". Simply substitute this famous name for the former "Truscon" name in specifying and ordering. Write for illustrated literature describing the complete line of Republic Steel Boxes and Skids available for use with trucks, crane or hand-operated units.

If you write maker identify as **IEN - 3674**

From temporary dies, costing only 15% of conventional tools.

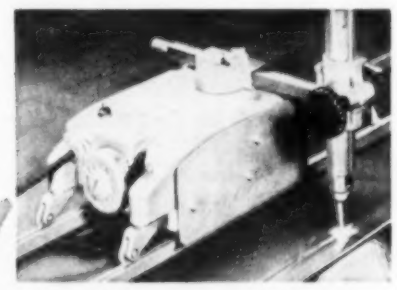
DAYTON ROGERS *Manufacturing Company*

MINNEAPOLIS 7, MINNESOTA

If you write maker identify as **IEN - 3675**

SAVE TIME AND MONEY with this

OXWELD Trade-Mark **MACHINE CARRIAGE**



Here is a new lightweight machine carriage—the OXWELD CM-45—that will mechanize literally dozens of oxy-acetylene jobs in large or small metalworking shops, and do them better than the most skilled hands.

You save money when you let the CM-45 do your cutting, beveling, flame-treating, or special welding jobs. Its efficient operation saves oxygen and acetylene as well as time, and rejects are reduced to a minimum.

For further information, call your nearest LINDE representative today. Ask for a free copy of Form 7839. No obligation.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 E. 42nd St., New York 17, N.Y. UCC Offices in Other Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto

"Oxweld" is a trade-mark of Union Carbide and Carbon Corporation.

MORE SPEED MORE SUPPORT

NEW MODEL #20 PADDOCK BAND SAW GUIDE

PADDOCK BALL-BEARING BAND SAW GUIDES, with every wheel the same size and interchangeable to any position on the guide, provides the greatest possible support to the saw blade.

The V-shaped groove in the thrust wheel holds the back of the blade, while the two front wheels give support to the sides of the blade, insuring proper support under all conditions. MODEL No. 20 is designed to work above or below the saw table. Gives greater ease and better adjustment for the thrust wheels for blades ⅛ to 1" wide. Saves blades—reduces material waste.

When Writing for Information, give size and make of machine on which guides will be installed.

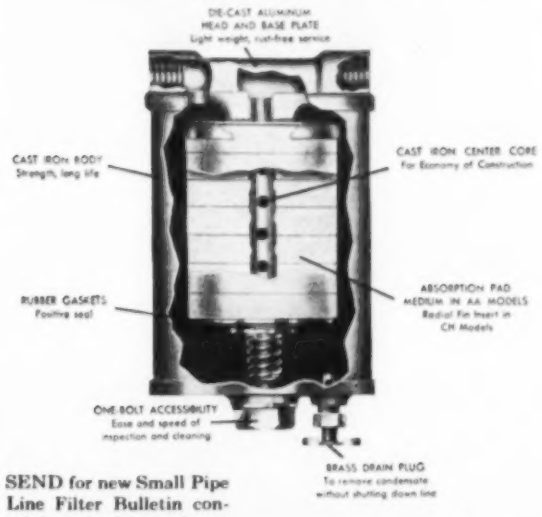
PADDOCK TOOL CO.
Guide Makers Since 1920
1418 Walnut Street • Kansas City 6, Mo.

Paddock BALL-BEARING **BAND SAW GUIDES**

If you write maker identify as **IEN - 3676**

NEW.. STAYNEW

PIPE LINE FILTER Designed for Low Pressures up to 40 psi



SEND for new Small Pipe Line Filter Bulletin containing complete engineering and performance data.

REPRESENTATIVES IN PRINCIPAL CITIES

DOLLINGER CORPORATION
3 Centre Park, Rochester 3, N. Y.

If you write maker identify as **IEN - 3677**

Get 19" Lift from 2 1/2" Clearance!

SIMPLEX RATCHET LOWERING JACKS

Lift or Lower Notch-by-Notch—Cannot be Tripped

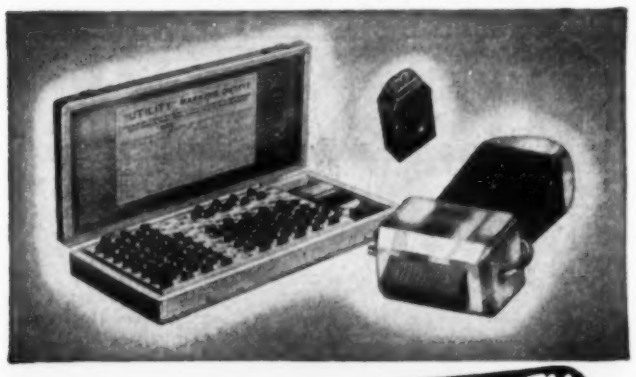
With Simplex Ratchet Lowering Jacks a minimum of toe clearance is required—and only Simplex Jacks provide equal lift capacity on *toe* or *cap*. In fast jacking action, all-purpose utility, extra safety features and rugged strength for longer life, Simplex Ratchet Lowering Jacks give you more for your money! Capacities of 1½ to 35 tons. Write today for Bulletin: Industrial 49.

SAFETY SUGGESTION—Use thin wood block—don't lift or lower steel against steel.

Simplex LEVER • SCREW • HYDRAULIC **Jacks**

TEMPLETON, KENLY & CO.
1012 S. Central Ave., Chicago 44, Ill.

If you write maker identify as **IEN - 3678**



THE NEW SAFETY "UTILITY" MARKING OUTFIT

Holder Holds Nine Sizes of Type From 1/32" to 1/4"

Designed for light stamping work, the "Utility" outfit is ideal for marking etched plates, tags, keys, stock checks; brand names or stock numbers on steel bars; special coding, serial numbering, identification, inspection and other marking where two or more characters are required.

Write for Catalog 100.

M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS
1039 CHATEAU STREET PITTSBURGH 33, PA.

If you write maker identify as **IEN - 3679**

TESTING . . Timer regulated unit controls circuit opening and closing

Source: PARAPLEGICS MFG. CO.
10066-70 Franklin Ave., Franklin Park, Ill.

Pamco Model 1000A

Life Tester is a new instrument that operates on a 110-volt 60-cycle ac. line to control the opening and closing of a circuit to an electric appliance. It governs the frequency of operation in a range from 0.1 sec. to 15 minutes. It counts the operations in totals to 999,999.

On-and-off time controls are independently adjustable. The output circuit rates 15 amperes. List price with the counter is about $119. It is $89 without the counter. Dimensions are about 6½ by 5 by 7 inches. Weight is about 9 pounds.

If you write maker identify as **IEN - 3680**

WELDING . . Automatic arc machine feeds two electrodes simultaneously

Source: LINCOLN ELECTRIC CO.
Box 3035-A, Cleveland 17, Ohio

Two electrodes work together

Twinarc trade names new design of the company's arc welding equipment for hidden or submerged welding in which two electrodes, normally spaced about ½ in. apart, are fed simultaneously to form a single arc crater. The equipment is intended for use on butt or fillet welds in ¼-in. or thicker plate. A ¾-in. fillet weld can be made at 15 ipm. employing current at 1,500 amperes. This current can be supplied by two generators operating in parallel or by a single large unit.

The new design employs a special electrode jaw, wire feed rolls and guides that can be employed with any of the company's standard Lincoln-weld heads. The standard single head control is used as well as the standard dc. current generator. The two-wire head takes electrodes to ⅛ in. in diameter. Normally one rides in approximate line ahead of the other but this arrangement can be varied to suit conditions.

If you write maker identify as **IEN - 3681**

SPRAYING . . Pneumatic nozzle, several sizes rate from 4 to 20 gpm.

Source: SPRAYING SYSTEMS CO.
3208 Randolph St., Bellwood, Ill.

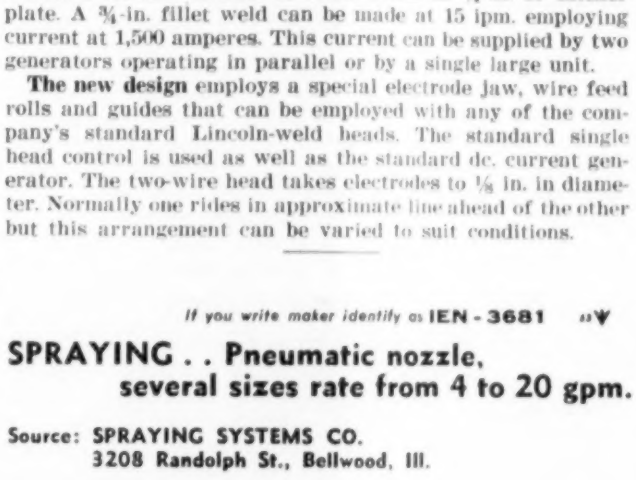
Series 1-J

Compressed air enters at the top of the body in this new nozzle assembly. Liquid to be sprayed is connected to the bottom. The liquid issues from the nozzle in finely atomized form with operating pressure at 6 to 90 lb. in the air supply line. Shut-off needles or plain construction can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3682**

you can COUNT on This!



The Logan Package Counter is a positive, mechanical counter which may be inserted in a line of roller or power conveyor. Efficient yet inexpensive. Many practical advantages as follows: (a) Controlled speed. (b) Positive apron conveyor construction eliminates slippage. (c) No air or electric power needed to raise package. (d) Package cannot be counted twice. Write for complete details.

Logan Conveyors
LOGAN CO., 276 CABEL ST., LOUISVILLE 6, KY.

If you write maker identify as **IEN - 3683**

Jrl. Ad. No. E-0600(c)

FOR

"on-the-spot" checking...

INVESTIGATE THESE WIDELY-USED TEST SETS

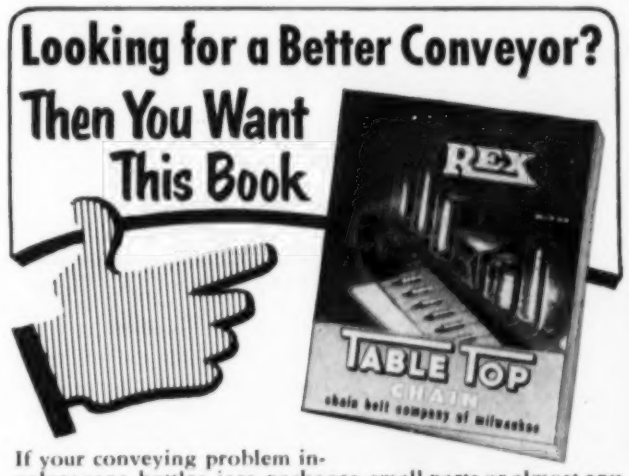
High on any list of "Musts" for making spot-checks of production processes and equipment are these L&N Test Sets. Highly versatile, they combine the portability, ruggedness and simplicity needed for plant use, with the accuracy and flexibility necessary for the laboratory.

Just a few of the more than 20 useful L&N instruments of a portable type are pictured above. For complete information, contact our nearest office or write 4905 Stenton Ave., Phila., Penna.

LEEDS & NORTHRUP
instruments • automatic controls • furnaces

If you write maker identify as **IEN - 3684**

Looking for a Better Conveyor? Then You Want This Book



If your conveying problem involves cans, bottles, jars, packages, small parts or almost any other small unit, you'll want this new book on Rex TableTop® Chain. The book explains all the advantages of TableTop's simplicity...how it reduces maintenance...speeds production ...helps cut conveying costs.

There are also sections on two other great conveying chains—Rex FlexTop® and Baldwin-Rex PlateTop®. Just use the coupon to send for your free copy today.

REX® Chain Belt COMPANY OF MILWAUKEE

Chain Belt Company 53-102
4675 W. Greenfield Avenue
Milwaukee 1, Wisconsin
Please send me TableTop Chain Bulletin 53-60.

Name.....
Company.....*Dept*.....
Address.....
City.....*State*.....

If you write maker identify as **IEN - 3685**

EVERY STEP A SAFE STEP WITH BLAW-KNOX GRATING

Everyone walks safely, confidently on Blaw-Knox Electroforged Steel Grating . . . the one-piece panels stay rigid and strong—without shimmy or shake—because there are no parts to work loose. Twisted cross bars provide sure footing under the most adverse conditions. For complete information, write for Bulletin 2365.

BLAW-KNOX GRATING
Industry's first choice for
• SAFETY • STRENGTH • LONG LIFE
• LOW UPKEEP • SELF-CLEANING

Grating Department
BLAW-KNOX EQUIPMENT DIVISION
of Blaw-Knox Co.
2050 Farmers Bank Bldg.
Pittsburgh 22, Pa.

BLAW-KNOX ELECTROFORGED STEEL GRATING

If you write maker identify as IEN - 3686

Profit with Eastman

STRAIN RELIEVERS

They Pay For Themselves...

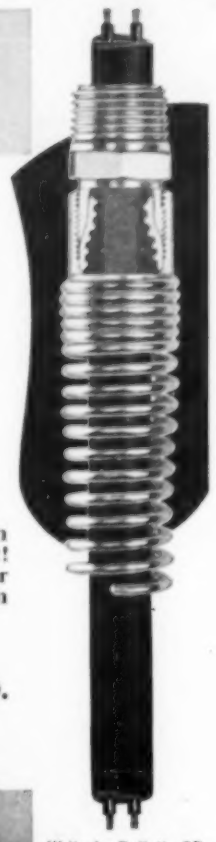
Increase service, satisfaction and sales appeal of your products.

- Increase service and safety of cords; reduce short circuit hazards.
- Positive grip prevents pulling wires from terminals; "the harder you pull—the tighter it grips!"
- Replaceable guards, couplings, cut extension cord repair time on portable shop tools.
- Add to sales appeal and value of your finished products, portable tools, appliances, etc.

Eastman's original patents on Strain Relievers dated back as far as 1922! Our 31 years of experience is your guarantee of quality, correct design and satisfactory performance.

"Safeguarding Industry's Lifelines of Mobile Power"

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN4, Manitowoc, Wisconsin



Eastman *first in the field*
HYDRAULIC HOSE ASSEMBLIES

Write for Bulletin SR. Complete listing of all sizes, types.

If you write maker identify as IEN - 3687

CASTER PROBLEMS?

See

THOMAS TRUCK
of Keokuk

Their complete line of casters has been designed and built to give long years of dependable operation under today's faster rates of travel and longer hauling distances. Whether you need casters with steel, rubber-tired, pneumatic or semi-pneumatic wheels with Hyatt roller bearings, in rigid, swivel, cone stem or trailer casters, see THOMAS. Their years of experience and manufacturing facilities are ready to serve you. *Whatever* your caster problem—see THOMAS, *first!*

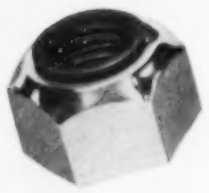
Send for Free Literature

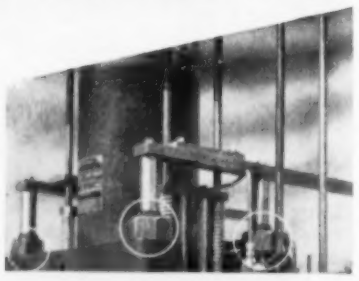
THOMAS TRUCK AND CASTER COMPANY
303 Mississippi River
KEOKUK, IOWA

Visit our Booth No. 901 at the 5th National Materials Handling Exposition, Philadelphia—May 18-22.

If you write maker identify as IEN - 3688

HOLDING THE PRESSURE LINE





WITH *Security*

THREE of the four Security Locknuts used on the tie rods of one of the many models of the F. J. Stokes Machine Company's Fully Automatic Plastic Molding Presses. These nuts must maintain their accurate adjustment against the extreme pressures developed by the movable platen.

With Security the load is carried by the body of the nut itself, not by the *Locking Insert*.

Security Locknuts are vibration proof. They are installed like an ordinary nut. Nothing to adjust—no holes to weaken bolts—nothing to shear—and a Security Nut does not require bolt tension to hold it. It stays "put" where you wrench it and can be removed and replaced *any number of times!* Authoritative tests have proved Security Locknut holding power.

Challenge us to solve your toughest fastener problem and ask to see these tests.

Send the coupon

Security

THE NUT YOU CAN'T SHAKE LOOSE

Please send me without obligation:
☐ A Thread Tolerance Chart.
☐ We have a fastener problem and would like to know more about Security Locknuts.

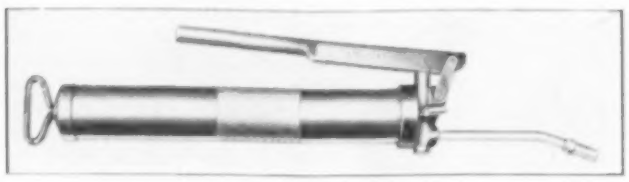
SECURITY LOCKNUT CORP.
North Ave. and 15th Ave.
Melrose Park, Ill.

Company Name .....
Address .....
Town ..... Zone ..... State .....
Signed .....

If you write maker identify as IEN - 3689

LUBRICATING . . Grease gun, lever operated for pressure to 5 ton

Source: LINCOLN ENGINEERING CO.
5732 Natural Bridge Ave., St. Louis 20, Mo.



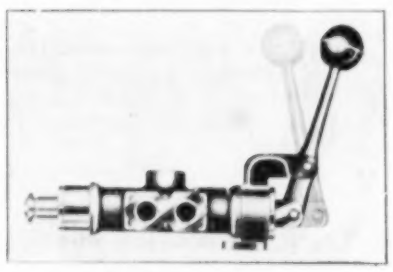
One of four new units

Four models have been added to the company's line of lever operated grease guns, two with 21-oz. capacity and two holding 32 ounces. Three of the guns will deliver pressure to 5 ton. The fourth, with 32-oz. capacity, is intended for volume rather than pressure delivery and will develop a little over 2 ton. All four include long hydraulic coupler extensions to reach into fittings in recessed positions. They are designed to refill quickly with one of the company's pumps or by suction action.

If you write maker identify as IEN - 3690

VALVE . . Four way pneumatic includes adjustable speed controls

Source: VALVAIR CORP.
949 Beardsley Ave., Akron 11, Ohio



Reciprocating spool

The company announces addition of a ⅜-in. four-way operating valve to its pneumatic line for use with air cylinders. The valve includes built-in adjustable controls by which operating speed can be set for the cylinder piston. It is available in a number of designs for hand, foot and power operation.

If you write maker identify as IEN - 3691

FILING . . Reciprocating head for fast tool and product finishing

Source: ENGIS EQUIPMENT CO.
429-33 S. Dearborn St., Chicago 5, Ill.

Ask for catalog

Di-Profiler is a new variable stroke reciprocating head for flexible shaft drive to interchangeably mount diamond and tungsten carbide files, points, blades, scrapers, cutters in a range of tools the company is prepared to supply. The reciprocating stroke is variable to a maximum of ¼-inch. Speed also can be varied. The head weighs about 1 lb. and fits in a worker's hand for finger control as illustrated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3692

BOOST PRODUCTIVE MAN HOURS... CUT HANDLING COSTS *with* Wayne LIFTS

SAVE TIME
... LABOR
...DOLLARS IN HANDLING

Make every man hour count in your plant . . . cut down slowdowns in materials handling with Wayne Lifts. From loading platform to production line there's a Wayne Lift to save you time, labor and money. Every one is "precisioneered" . . . made to last for years without trouble . . . designed for easy servicing.

Wayne Engineers, utilizing "LIFTronics", offer a complete engineering service to establish the most efficient and practical solution to your lift problems. Each Wayne Lift—loading dock, cross-over bridge, materials lift, service lift—is custom-engineered to your plant's particular needs. Take the first step to improving your materials handling, write for "LIFTronics . . . science of materials handling."

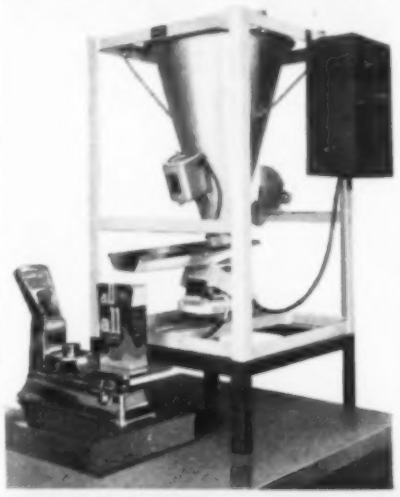
THE WAYNE PUMP CO.
Salisbury, Maryland
Toronto, Canada

Wayne NATION WIDE SERVICE

WAYNE LIFT DIVISION, Ironton, Ohio

If you write maker identify as IEN - 3693

Weighing Machine for Ingredient Operations



THERE IS NO SUBSTITUTE FOR EXACT WEIGHT

A new semi-automatic unit for all processors. Equipment comprises (1) EXACT WEIGHT Scale to correct capacity (2) Vibra-flow feeder conveyor with two rate of flow rheostat control (3) Syntron hopper with pulsating magnetic electric vibrator and hopper support (4) EXACT WEIGHT electronic amplifying unit with automatic cut off for main and dribble feeds. One single push button control starts increased output, assures automatic accuracy and cuts labor costs. Write for complete details.

EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 3694

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAVE The WORKER and you SAVE **PRODUCTION**

Stonehouse Signs are made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"...the only authentic standards.

Hundreds of different stock-worded signs for prompt shipment • Special worded Accident Prevention signs also produced to your specifications.

Our complete Catalog No. 9, 64 pages, full color, free on request.

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Denver 4 Colorado
"Signs Since 1863"

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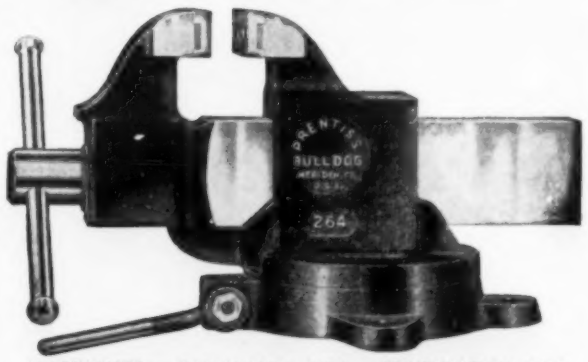
PRENTISS

"BULL DOG" VISES

Backed by 80 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE
HINGE PIPE — WOODCUTTERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features that give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

See Us at Booth 737, Triple Mill Supply Convention

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN - 3696

THIS P-K SCREW CUTS COSTS OF ASSEMBLY UP TO 50%

Forms thread as it's turned in

SKIPS Tapping

AVOIDS Bolting Riveting Inserts in Plastics

SAVES Time and Trouble in Millions of Assemblies

P-K TYPE Z Hardened SELF-TAPPING SCREW

One of six types for every metal and plastic assembly. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer

See why industry's fastening-wise leaders say —

YOU'RE O.K. WITH P-K — THE *ORIGINAL*

PARKER-KALON SELF-TAPPING SCREWS

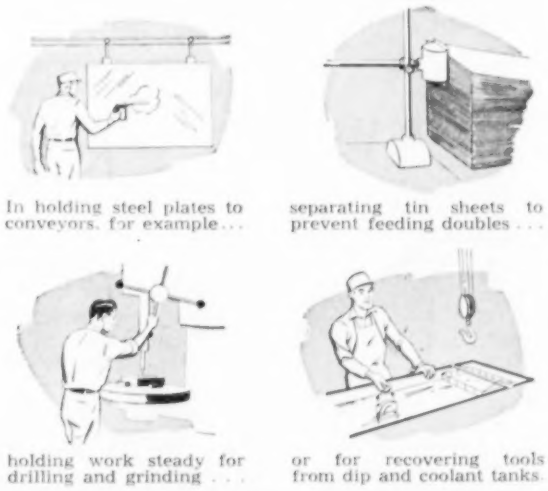
AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

If you write maker identify as IEN - 3697

FREE

PERMANENT MAGNET IDEA LITERATURE KIT

Shows you how Carboloy magnets can speed up your shop work . . . save you time, money



In holding steel plates to conveyors, for example . . . separating tin sheets to prevent feeding doubles . . . holding work steady for drilling and grinding . . . or for recovering tools from dip and coolant tanks.

NOW, see how Carboloy permanent magnets can eliminate clamps, jigs, vises, fixtures and other costly units . . . speed up jobs, retrieve tools, perform all sorts of unique and useful services around your plant.

Send for free kit containing handy magnet ideas you can put to work at once – complete with diagrams, full details. Send today, and from time to time, we'll send you other free application suggestions that will really pay off for you.

PERMANENT MAGNET BENEFITS

Carboloy permanent magnets need no electric power, have no operating parts. Give off stable, powerful energy that lasts permanently . . . are not affected by heat, moisture, vibration . . . cost nothing to operate. Write today for the full story and for your *free* magnet idea kit. No obligation, of course.

"You-Try-It" Magnet Packages Available

Shop Package No. 1 – Contains 48 Carboloy permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00. Get yours now!

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each, and 1 style – 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00. Order today!

"Carboloy" is the registered trademark for the products of Carboloy Department of General Electric Company

CARBOLOY PERMANENT MAGNETS

DEPARTMENT OF GENERAL ELECTRIC COMPANY

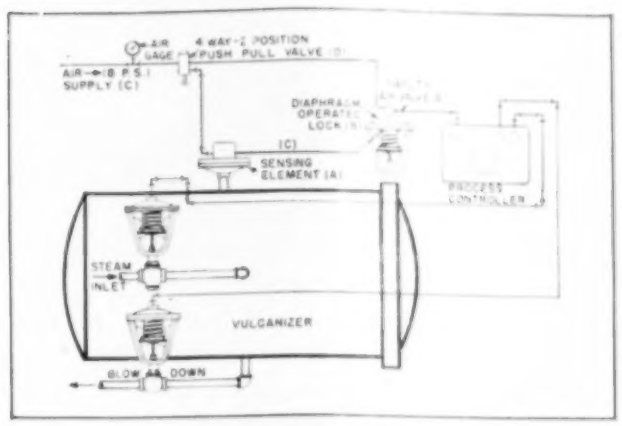
11177 E. 8 Mile Street • Detroit 32, Michigan

Plants at Detroit, Michigan; Edmore, Michigan; and Schenectady, New York

If you write maker identify as IEN - 3699

PROTECTING . . Safety door lock for application on pressure vessels

Source: WESTON ELECTRICAL INSTRUMENT CORP. 641 Frelinghuysen Ave., Newark 5, N. J.



Prevents worker injury

Illustrated is application of the company's new door lock on a steam vulcanizer. The lock prevents admission of steam to the interior of the vessel until its door has been closed and locked. It also prevents the door from being opened until pressure in the vessel has been reduced to 10 in. of water or less. Careless opening or closing is prevented.

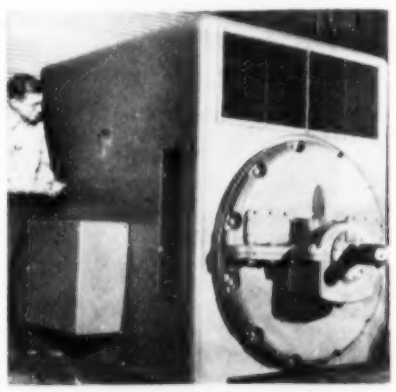
The equipment includes a sensing element mounted on the pressure vessel shell to receive pressure from the interior. This element operates on low pressures. It is not harmed by higher pressures to 150 pounds. It controls the operating diaphragm on the lock mounted on the door ring.

Position of the stop bolt in this lock controls operation of a safety air valve mounted on the lock to permit or prevent passage of air to the control instrument. The air line from the safety valve is connected to the diaphragm valve on the steam inlet and blowdown lines on hand controlled pressure vessels. Compressed air at 18 lb. is required for the operation.

If you write maker identify as IEN - 3700

MOTOR . . Squirrel cage induction for boiler feed pumps, to 2,500 hp.

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.



Bulletin GEA-5813

The housing into which this new power station motor is built is rectangular in outline. It mounts side inlets with louver protection for air intake. Discharge is through a louvered end opening, near the top, to point horizontally over the output shaft.

The motor is available in ratings from 1,000 to 2,500 hp. for operation at 3,600 rpm. Temperature rise is 40 deg. C. with Class-A insulation. Overall length is 95 to 111 in., width 52 to 58 in., height 63 to 75 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3701

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NEW ACME BUSHING CATALOG

Contains America's LARGEST BUSHING Selection

Features 2 Standards

A.S.A. Standard *Plus* Acme Standard

Makes Bushing Procurement Easy . . . Fast! Send For Your FREE Copy Now!

Simplifies, speeds bushing selection. Packed with valuable data. Saves you time and trouble. Also includes liners, leader pins, dowel pins, locating jigs, etc.

Serving Industry For 28 Years

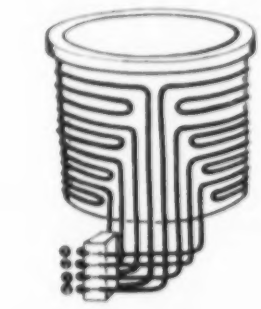
ACME INDUSTRIAL COMPANY

215 N. Laflin St., Chicago 7, Illinois

MANUFACTURERS OF DRILL JIG AND FIXTURE BUSHINGS

If you write maker identify as IEN - 3702

Here's why the STA-WARM METHOD Melts Compounds so Efficiently

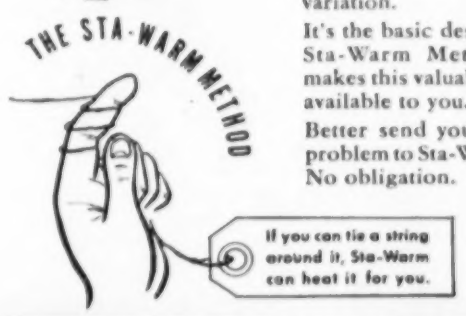


Multiple circuits, controlled by sensitive bimetallic relays, automatically turn heat on . . . or off . . . as the compound level rises or falls in the tank.

You specify the "ideal" temperature for melting the particular compound your plant uses and Sta-Warm will provide the tank to hold to within a 1°F.(±) variation.

It's the basic design in the Sta-Warm Method that makes this valuable feature available to you.

Better send your current problem to Sta-Warm now. No obligation.



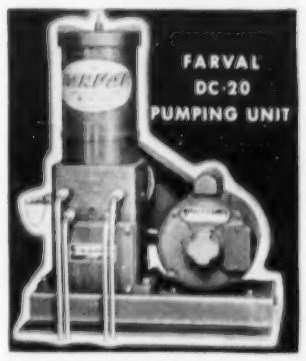
Sta-Warm ELECTRIC CO.

560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 3703

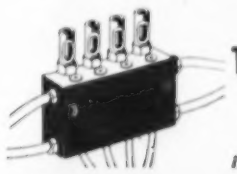
NEW AUTOMATIC LUBRICATION FOR SMALLER MACHINES

SMALLER machines can now have a completely automatic system of Farval centralized lubrication—as efficient and economical as the larger Farval systems which have proved so valuable on heavy industrial equipment during the past 26 years.



Only 20½" high. Base 15" x 10½" Driven by ¼ hp ac motor.

Heart of the system is the new small DC-20 pumping unit which is adaptable for compact, easy installation. Designed for use with unique Dualine valves that deliver exact measured amounts of lubricant to each bearing as often as desired. No need to stop machine for lubrication. Eliminates down time required for hand oiling. Saves up to 75% in lubricant. WRITE NOW FOR FREE BULLETIN 39.



THE FARVAL CORPORATION

3258 East 80th Street

Cleveland 4, Ohio

Farval is an affiliate of The Cleveland Worm & Gear Co.

If you write maker identify as IEN - 3704

NEED COPIES?

MODERN MIMEOGRAPHING—New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections—(3) more successful filing—(4) marked superiority in resistance to fingerprints.

MODERN SPIRIT DUPLICATING—A. B. Dick CLEEN-SEAL master sets and spirit carbons guard against stains and smudges. Available in a variety of sizes for long, medium and short runs. Five brilliant colors—purple, red, green, blue and black.

Write Dept. IEN 453 for full information—or call the A. B. Dick Distributor listed in the classified section of the phone book.

A·B·DICK

THE FIRST NAME IN DUPLICATING

A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

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Though Hired for Laughs, They're Sure No Fools ...'cause PROTO means PROfessional TOols!

The PROTO Line Includes Wrenches of All Types, Pliers, Screwdrivers, Punches, Chisels, Sockets & Handles, Pullers, Tool Boxes, Industrial Tools and Many Others.

What are *professional* tools? They are the kind that perform for years, safely and easily... that are made of special alloy steels and scientifically heat treated ... that have advanced, tested designs... that are guaranteed. PROTO tools meet these tests because they are designed and manufactured for experts. To build a matched set of *professional* tools, fill your tool needs from your PROTO dealer's complete line. Send 10¢ for 68-page catalog to

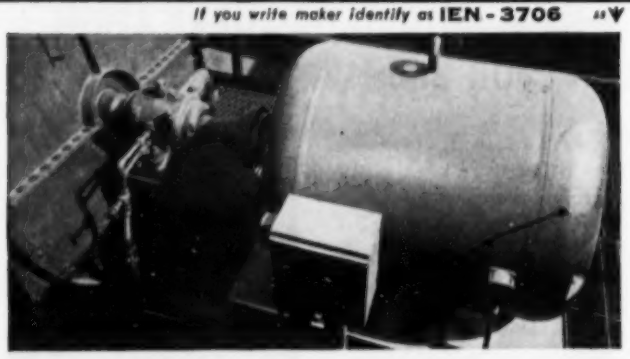
PLOMB TOOL COMPANY
2271T Santa Fe Ave., Los Angeles 54

5285

PROTO TOOLS LOS ANGELES

Eastern Factory—Jamestown, N.Y.

If you write maker identify as IEN - 3706



250 hp, 220 volt motor starts with minimum line voltage disturbance

...it's a Wagner

Increment Motor and Starter Combination

This fly ash control equipment is powered by a 250 hp, 220 volt, 1160 rpm, totally enclosed, fan-cooled Wagner increment motor and starter combination – an economical method of starting polyphase, squirrel-cage motors where reduced current draw at start is required or desirable. Voltage disturbances on the line are reduced, because current taken from the line is not broken during the starting period. Inrush of motor current is limited to values acceptable to most power companies. For complete information, send for Bulletin MU-128.

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

M53-6A

If you write maker identify as IEN - 3707

To save money, let 'em roll on the NEW MHS WHEELVEYOR

Here's the inexpensive, rugged, practical, *money-saving* way to move smooth, full-bottomed commodities in plant, warehouse and store, and to and from carriers. Save time, money and manpower with new MHS Wheelveyor!

Many great features for long service, easy operation, extreme flexibility and economy. Get your copy of Wheelveyor bulletin and plan your own Wheelveyor installation. Write today!

SEND FOR FREE BOOK!

Mechanical Handling Systems, Inc.

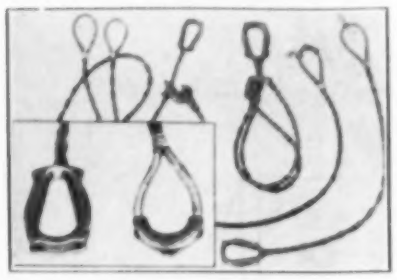
4605 Nancy Ave. • Detroit 12, Michigan *Offices in Principal Cities*

In Canada: Canadian Mechanical Handling Systems, Ltd.

If you write maker identify as IEN - 3708

HANDLING . . Wire rope sling employs reusable steel pinned thimbles

Source: A. LESCHEN & SONS ROPE CO.
5907-11 Kennerly Ave., St. Louis 12, Mo.



Slings to order

Red-Strand is a new 8-part braided sling. It is available in a range of designs and lengths with each of the eight wire rope parts measuring 3/32 to 9/16 in. in diameter. Thimbles are applied in the spliced loops of the sling by means of steel pins. These pins can be removed to take the thimbles out of a worn sling and apply them in a new one. The saving ranges from 8.5 per cent to 33 per cent on slings of various sizes and thimble design.

If you write maker identify as IEN - 3709

METAL . . Nickel alloy to handle acids and alkaline solutions

Source: HAYNES STELLITE CO.
723-27 S. Lindsay St., Kokomo, Ind.

Technical data upon request

Hastelloy Alloy F is a new nickel alloy containing molybdenum, chromium and iron. It has been developed to withstand the corrosive effects of oxidizing and reducing acids. It can be employed to handle both acid and alkaline solutions. It will resist pitting and stress corrosion cracking in chloride solutions. It has good hot working characteristics.

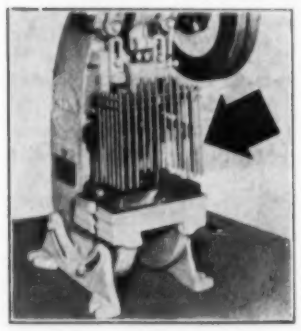
Sheet and plate are available in an overall thickness range between 0.05 and 1.00 inch. Plate width is to 48 inches. A typical use is the dome lining of a paper and pulp digester.

The metal is intermediate in price, corrosion resistance and workability between the austenitic stainless steels and nickel-molybdenum alloys. It can be welded by metallic arc, inert gas shielded arc or on resistance equipment.

If you write maker identify as IEN - 3710

PROTECTING . . Punch press guard encloses die space in adjustable cage

Source: BENCHMASTER MFG. CO.
1833-37 W. Rosecrans Ave., Gardena, Calif.

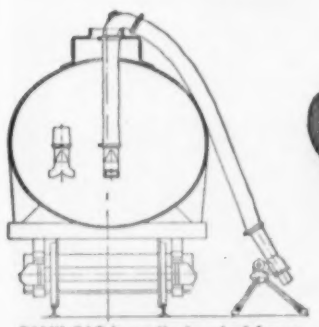


Adjusts quickly

Rectangular steel frame secures to a press frame in this new punch press guard. The frame carries aligning holes to take vertical pins that surround the die space. The pins are placed to provide the required openings for work insertion and ejection. They do not move after the setup has been made. Application can be made on any standard press as well as on the equipment manufactured by the company.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3711



TANK CAR is easily freed of fumes for workers' safety.

CHEMICAL STILL is here ventilated while being repaired.

KEEP AIR FRESH

in confined places with COPPUS *Design "A" Ventilator*

Improve workers' safety — health — comfort — efficiency. Get rid of dangerous gases, fumes, stagnant air. Coppus Design "A" Ventilator ventilates tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments, fuselages. For complete information, write Coppus Engineering Corporation, 144 Park Ave., Worcester 2, Mass. Sales Offices in *Thomas' Register.*

Other "Blue Ribbon" Products in *Chemical Engineering Catalog, Refinery Catalog, Best's Safety Directory* and *Mining Catalogs.*

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 3712

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-4.

L. B. FOSTER CO.

CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 3713

where aisles are narrow, floor-loads limited, solve your handling problems with → KALAMAZOO Xpediter

...brought to you by KALAMAZOO | ...70 years service to railroads and industry

ONLY 33" WIDE . . . MODELS 715 to 1025 POUNDS . . . HANDLES BOXES, BAGS, BARRELS, PRODUCE AND OTHER MATERIALS

MODEL 301 with 18" forks, hydraulic tilt and 18" lift.

On display at 5th National Materials Handling Exposition . . . Booths 1537, 1539, 1541

6 MODELS TO SUIT YOUR PARTICULAR NEEDS

Here's a light-weight, low-cost industrial truck that speeds handling, cuts costs in congested areas and on light floors and elevators where larger, heavier equipment cannot operate. Xpediter's unequalled maneuverability and versatility makes it an important adjunct to your present handling equipment . . . extends the advantages of mechanical handling to every corner of your plant or warehouse.

Operation of Xpediter is simplicity itself. As easy to steer as a bicycle. No gear shifting required for forward and reverse travel. Simple, conveniently located hydraulic controls. Six rugged models, hydraulic or manual lift. For complete details, get Bulletin XN 43.

Send, too, for details on these Kalamazoo Trucks . . . proven in service throughout the country.

KALAMAZOO MODEL 2500 SPEED TRUCK, 2,000 and 3,500 pound capacities. Operates in narrow aisles and box cars.
Get Bulletin SN43

KALAMAZOO MODEL 3600 TRACTOR. A fast efficient cargo carrier for congested areas. Ideal for small tractor-trailer operation.
Get Bulletin TN43

KAL-TRUK handles all types of bulk materials on construction jobs and in plants. Capacity: 2/3 cu. yd. of concrete, 1 cu. yd. of bulk material.
Get Bulletin KN43

SOME EXCELLENT DEALER TERRITORIES OPEN . . . WRITE FOR COMPLETE INFORMATION

KALAMAZOO MANUFACTURING COMPANY
KALAMAZOO, MICH., U.S.A.

If you write maker identify as IEN - 3715

FLEXIBLE STORAGE FAST SELECTION

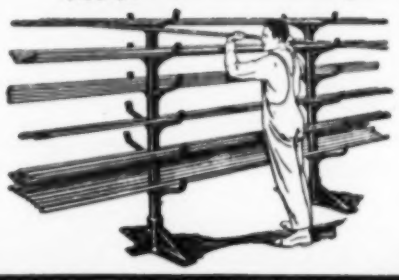
Time lost and hauling each bar from the old style, closed side rack is readily saved with Brown Time-Saving Racks which require only inches of side movement. Each length, width, and thickness of stock is displayed in "goldfish" visibility for quick selection. Waiting workmen are served promptly. Additional storage capacity can be added at any time by ordering one or more of the interchangeable units.

Respacing the units is easy, since standard racks need not be anchored or braced unless crane loaded. This storage flexibility can be further extended by adding or subtracting arm-holding sections.

Brown Racks are simple, durable, made of metal in five standard models. They can't burn, sag or twist. Depreciation is practically nil. Lined up in soldierly rows, they make a neat orderly appearance, which not only builds employee enthusiasm, but generates a more respectful attitude toward economies in general.

SEND FOR BULLETIN NO. 26N

BROWN'S *QUICK-SERVE* RACKS



BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

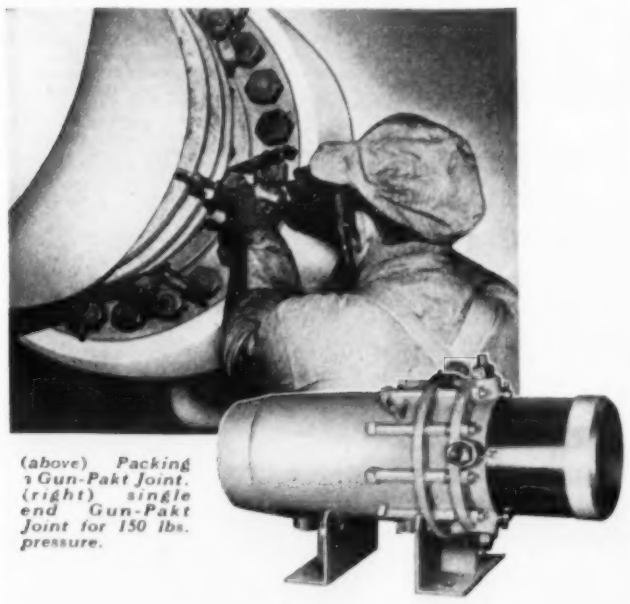
If you write maker identify as IEN - 3716

AVOID SHUTDOWNS! USE EXPANSION JOINTS PACKED UNDER FULL STEAM PRESSURE

Production schedules can be ruined by repair and service shutdowns on steam distribution lines. Avoid shutdowns by using the slip-type expansion joints that can be packed under full steam pressure—Yarway Gun-Pakt Expansion Joints.

You simply insert a piece of Yarway plastic packing, twist a wrench, and the joint is tight...the job done.

Other Yarway Gun-Pakt advantages—(1) strong, rugged construction with less chance of major shutdowns, (2) fewer joints needed per length of pipeline because of longer sleeve traverses, (3) lower year-in-year-out maintenance costs.



(above) Packing a Gun-Pakt Joint. (right) single end Gun-Pakt Joint for 150 lbs. pressure.

Public utilities, industrial plants and institutions find Gun-Pakt one of the greatest expansion joint advancements in recent years. See how Gun-Pakt joints will fit into your steam lines. Write for Yarway Expansion Joint Bulletin EJ-1912.

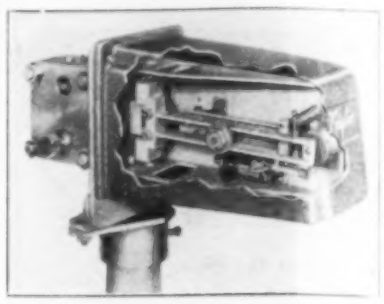
YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY *gun-pakt expansion joints*

If you write maker identify as IEN - 3718

CONTROL . . Pneumatic transmitter actuates remote indicator, controller

Source: TAYLOR INSTRUMENT COS.
60 Ames St., Rochester 1, N. Y.



For process variables

Transaire trade names a new differential pressure transmitter consisting of a combination of a diaphragm sensing and measuring element and a pneumatic transmitting mechanism. It has been designed to measure and indicate as well as to control flow, liquid level, specific gravity. Two ranges are 20 to 200 in. and 80 to 800 in. of water.

The transmitter converts the measurement into air pressure in a proportional range between 3 and 15 lb. per square inch. This pressure is carried through small lines to actuate receiving instruments in remote locations. The transmitter itself is located close to the point of measurement.

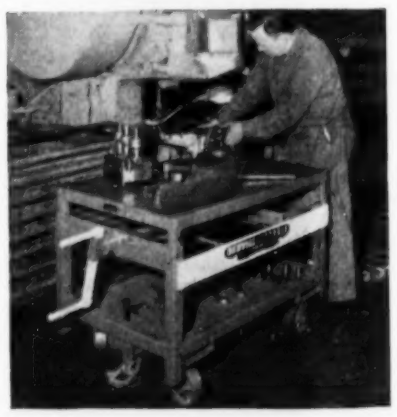
The sensing element is enclosed in a stainless steel or steel housing. It consists of a teflon coated glass fabric diaphragm operating in an inner housing that is shaped to the diaphragm contour for over-range protection. Diaphragm movement is transmitted through a pressure sealing bellows to the pneumatic mechanism where any movement of the connecting beam about its pivot point is opposed by a force-balance bellows.

Output is 3 lb. at zero differential and at maximum calibrated differential it is 15 pounds. The assembly includes a damping bellows to prevent hunting. The transmitter can be applied on pressures to 1,500 lb. on the primary side. Maximum operating temperature is 300 deg. F. Overall dimensions are 14½ by 6 by 7⅝ inches. The air that escapes steadily, in small amount from the control nozzle, purges the interior so surrounding fumes or dust cannot enter the housing.

If you write maker identify as IEN - 3719

ELEVATOR . . Portable lift table, crank operated, rates one ton load

Source: SERVICE CASTER & TRUCK CORP.
448 Somerville Ave., Somerville, Mass.



Positions work and tools

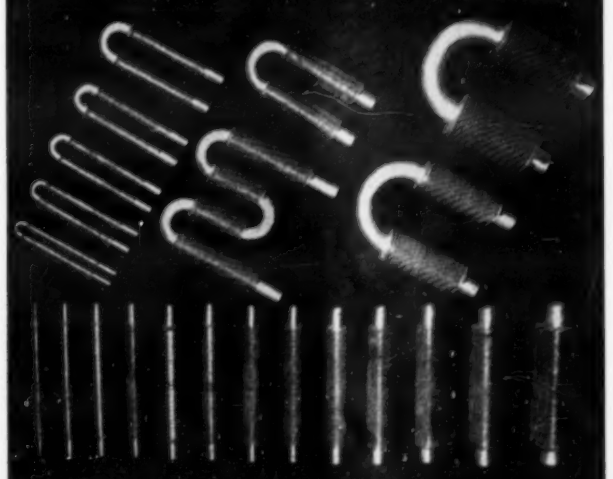
New design of the company's Liftable employs a crank operated screw, a cross head and chains riding over sprockets to raise and lower the table top through a 14-in. movement from 28 in. above the floor. The top measures 26 by 43 inches. The complete assembly weighs 380 pounds. The operating crank slides in a socket at the end of the screw so it can be turned beneath overhanging loads. The table mounts on 6 in. steel wheels in standard construction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3720

RO-FIN TUBES

IDEAL SURFACE FOR HEAT TRANSFER



Over 100 sizes in production!

ROME
TURNEY RADIATOR COMPANY

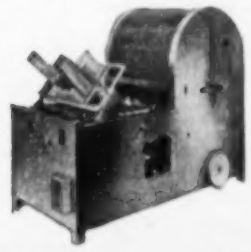
200 East Front Street • Rome • New York

If you write maker identify as IEN - 3721

Cartons made in your plant SAVE TIME AND MONEY

Growing numbers of manufacturers are installing this automatic Carton Former. Our Model PA uses thrifty die-cut blanks to form cartons at speeds up to 102 per minute. These blanks provide great savings over factory-made cartons or hand set-up cartons. You can make your cartons just as you need them . . . Avoid long waits . . . Use less storage space. Requires only part-time supervision by one person. The versatile Model PA is easily adjusted for different sizes and can be adapted to handle various carton styles. Compact, too—occupies only 3' x 6' of floor area.

Write for further information



• *CARTON DIVISION* •

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS · DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · MEXICO D. F.

If you write maker identify as IEN - 3722

7 come 11

THERE are seven stock resistors and eleven made-to-order resistor types in Ward Leonard's line of Vitrohm resistors to give you accurate, uniform, dependable current control.

This is the largest selection of stock resistors, and the most complete supply of resistor components ready for immediate assembly to your particular specifications, ever offered by any manufacturer.

Find out for yourself how Vitrohm resistors will best meet your requirements in current control. Write for our Catalog 15. Ward Leonard Electric Co., 33 South Street, Mt. Vernon, N. Y.

STRIPOHM RESISTOR for tight quarters in electronic equipment

Save money with Vitrohm resistors. Both stock and made-to-order resistors can be supplied promptly to meet your every resistor need.

3.5

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RHEOSTATS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 3723

Do You USE or NEED INFRARED HEAT?

THESE USEFUL **DATA SHEETS** *Show you how to* **SAVE TIME & MONEY** with **CHROMALOX** *Electric* **RADIANT HEATERS**

TELL US your application problems and we'll send you valuable information which may lead to improved production at decreased costs on the jobs for which you use or need infrared heat in your plant.

EDWIN L. WIEGAND CO., Industrial Div.
7505 Thomas Boulevard, Pittsburgh 9, Pa.
I need infrared heat for _____
_____
Send me application file on above.
Name _____
Company _____
Street _____
City _____ Zone _____
State _____ 10-21

See Chromalox Strip Heaters Advertisement Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 3724

di-acro PRECISION MACHINES

for Die-less Duplicating

NEW CATALOG packed with ideas for making parts by "Die-less Duplicating" —the money-saving, time-saving technique Di-acro created.

BENDING MANUAL gives exact methods for bending processes in a variety of materials. Over 90 diagrams and charts with tooling suggestions.

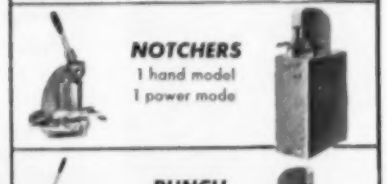
Sent on Request

BENDERS 5 hand models 2 power models

SHEARS 4 hand models 4 power models

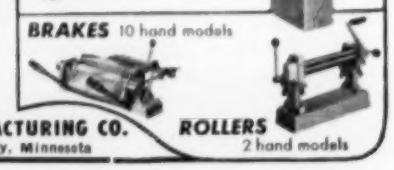
ROD PARTERS 2 hand models 1 power model

NOTCHERS 1 hand model 1 power mode



PUNCH PRESSES 2 hand models 2 power models

BRAKES 10 hand models



ROLLERS 2 hand models

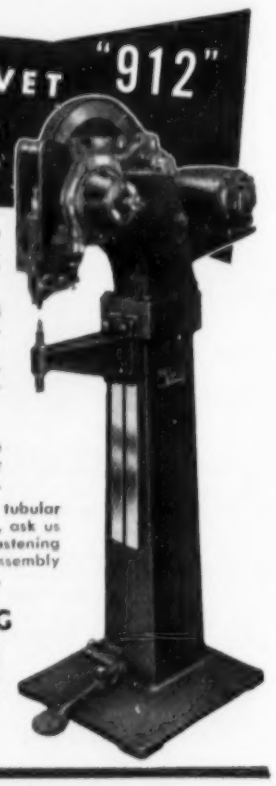
O'NEIL-IRWIN MANUFACTURING CO.
718 - 8th Ave., Lake City, Minnesota

If you write maker identify as IEN - 3725

Chicago RIVET "912"

AUTOMATIC RIVET SETTER

CUTS COSTS 3 WAYS



1 FASTENS FASTER . . . Only the speed of the operator limits the 912's riveting speed. Completely automatic. A push on the foot pedal automatically feeds, inserts and clinches the rivet.

2 DOES WORK OF SEVERAL MACHINES Quick change rotary hopper and raceway makes the 912 adjustable in 5 to 10 minutes to set different size rivets. Adjustable anvil height and 12-inch throat provide further versatility.

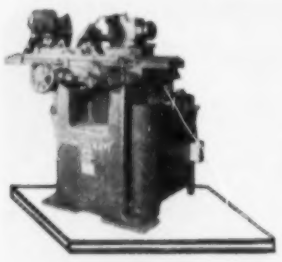
3 SAVES ON MAINTENANCE . . . The 912 is massively built to stand the shocks of constant use and is designed for quick, easy servicing and parts replacement.

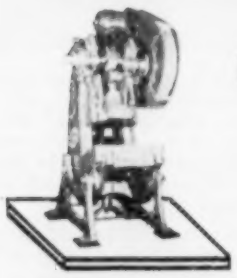
If your assembly calls for 3/16" steel tubular rivets or smaller, of 15/16" lengths or less, ask us to show you how the 912 can cut your fastening costs. Send a sample of your problem assembly (or blueprint) for a free fastening analysis.

FREE CATALOG contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 3726



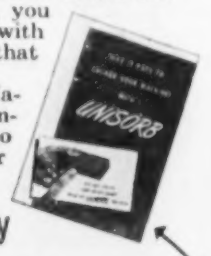


For Longer Machine Life Use UNISORB® Mountings

Eliminate 60%-85% of transmitted machine vibration, reduce machine maintenance and eliminate floor drilling — by mounting your machines on UNISORB.

No bolts, no lag screws when you use UNISORB pads with our special cement. Or, you can use UNISORB pads precoated with adhesive when mounting machines that do not require shimming.

"Why It Pays To Anchor Your Machines With UNISORB" tells the entire story about this modern way to reduce noise and vibration. Ask for your copy. No obligation.



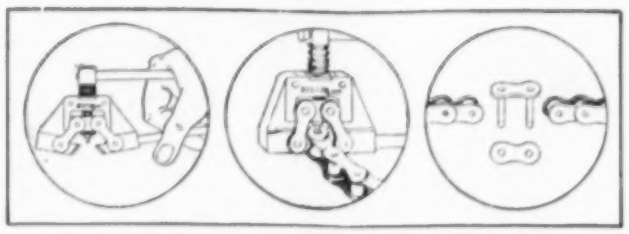
the FELTERS company
208 South Street
Boston 11, Massachusetts

WRITE FOR YOUR COPY OF THIS INTERESTING BOOK

If you write maker identify as IEN - 3727

CHAIN REPAIR . . Pressing fixture for pin removal from a roller chain

Source: BOSTON GEAR WORKS
63 Hayward St., Quincy 71, Mass.



No need to hammer the chain

A roller chain can be disconnected by inserting it into this new chain breaking tool and by turning a lever equipped threaded pin. This pin forces the chain pin through its link plate. Then the chain is moved to the mating chain pin and it also is pressed out of the same plate. The fixture will take chain from ¼ to ¾-in. pitch. The threaded pin is made of case hardened tool steel. Length measures 5½ inches.

If you write maker identify as IEN - 3728

HANDLING . . Steel grab hook for use on ⅜ to ⅝ inch load chain

Source: S. G. TAYLOR CHAIN CO.
P. O. Box 509-A, Hammond, Ind.

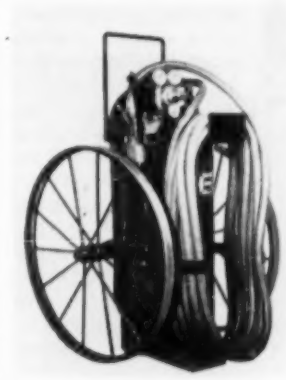
Matches chain strength

New hook is made of an alloy steel forging and has been designed to equip the company's line of boomer chain. It also is available alone for application on boomer chain now in service. Three sizes are for chain measuring ¾, ½ and ⅝ inch respectively.

If you write maker identify as IEN - 3729

EXTINGUISHING . . Dry chemical unit, wheel mounted for Type B and C fires

Source: AMERICAN-LAFRANCE-FOAMITE CORP.
903 Erie St., Elmira, N. Y.

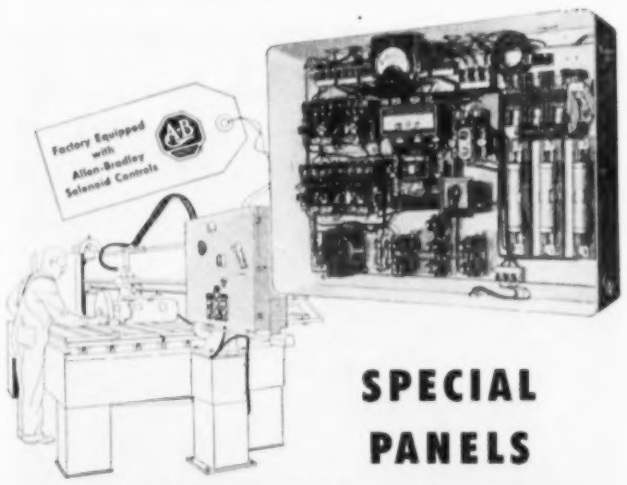


Quick acting Alfco

Model 150 is a new wheel mounted extinguisher holding 150 lb. of Alfco Dry Chemical and an expelling charge of nitrogen at 200 lb. pressure. The unit can be wheeled quickly to a fire by one man, maneuvered and operated to smother it. The discharge also cools and insulates the operator from intense heat. If needed, all of the content can be discharged in about 45 seconds. A portion is held in the housing if the operator releases the nozzle mechanism. Range is 20 to 25 feet. Charged weight is 480 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3730



SPECIAL PANELS for SEQUENCE CONTROL

Any Size • Any Sequence • Any Machine

Allen-Bradley special control panels can be engineered to fit your particular machine. They can be designed for any sequence of automatic operation of motor driven machines. Such special panels, made by Allen-Bradley from standard components, provide correct sequence control, greater safety for operators, and lower installation and maintenance costs. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 3731

TAL PORTABLE BENDERS — Complete ALL Piping Jobs FASTER

SAVE ON

- Number of Fittings
- Elbows & Couplings
- Cutting, Threading
- Overall Costs

Install pipe & conduit *faster* at *lower cost* by saving on cutting and threading and by reducing up to 80% the number of fittings or elbows & couplings otherwise needed. You can with a Tal, because Tal Portable Benders make any degree bend up to 180° in A *SINGLE* OPERATION WITHOUT SHIFTING THE PIPE.

No guesswork for offsets, long sweeps or any other bends. No experience necessary to make accurate, wrinkle-free bends right on the job. *No spoilage.* Bend indicator assures identical repeat bends without measuring. Learn today how you can earn more money and handle more jobs with a Tal Bender.

COMPLETE LINE OF BENDERS
For pipe up to *8 inch.*
For copper and thinwall tubing.
6-Way Hickeys — lifetime guarantee.

WRITE FOR THIS FREE BULLETIN

Tal Bender, Inc. Dept. 2 Milwaukee 2, Wis.

If you write maker identify as IEN - 3732

LIKE AN ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:
$85.91 if coal (9879 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (84,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.

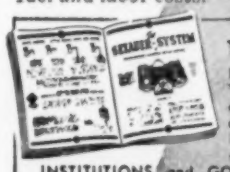
"EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300° F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.



THE NEW 'SEXAUER' CATALOG, Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog promptly.

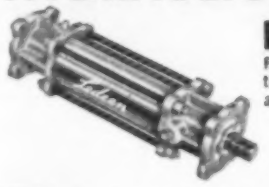
J. A. SEXAUER MFG. CO., INC., Dept. K-43
2503-05 Third Avenue, New York 51.

as advertised in **THE SATURDAY EVENING POST**

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as **IEN - 3734**

Ledeen PNEUMATIC & HYDRAULIC Equipment



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For air, oil, water, gas or steam operation—in standard and special diameters and stroke lengths.

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VALVES

For operating air and hydraulic cylinders and motors, single and double acting. Hand, foot, power and solenoid operated.

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VALVE ACTUATORS

For power operation and remote control of line valves. Adaptable to most any make, size and type of valve, to operate against any line pressure, for any fluid medium, with any pressure.

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AIR-HYDRAULIC PUMPS

High pressure oil from low pressure air. For clamping, drawing, forming, testing and other operations requiring long high pressure cycles without vibration or overheating. Ready for connection to plant air and hydraulic lines.

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Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

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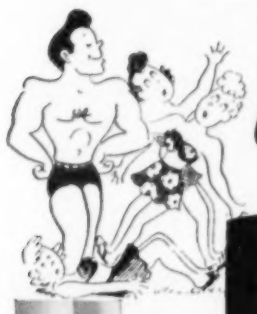
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as **IEN - 3735**



figures DON'T lie!

STRAIGHTGROUND • WHIPSLEEVED

PIVOT HIGH SPEED STEEL **PUNCHES**

HAVE ACHIEVED THESE RECORDS . . .

- 118% increased punch press efficiency (Illinois concern)
- 700% increased production eliminating shaving punch (Skilsaw Inc.)
- 900% increased production replacing drills, outlasting them 60 to 1 (Clinton Specialty Works)
- 264,000,000 perforations without breaking or replacing a single punch (Powell Steel Products Co.)
- Achieved with *one* unit of labor and *one* punch press the job of 12 units of labor and 6 punch presses (South Bend Tool and Die)

FOR INCREASED PRODUCTION AT DECREASED COSTS, USE PIVOT PUNCHES.

For complete catalog write Department I. N.

pivot punch and die corp.
NORTH TONAWANDA, N. Y.

If you write maker identify as **IEN - 3736**

EFFICIENCIES UP TO 98%

PHILADELPHIA SPIRAL BEVEL-HELICAL SPEED REDUCERS

For vertical or horizontal right angle drives where high efficiency and smooth dependable operation are desired, Philadelphia Spiral Bevel-Helical Reducers are widely preferred. They are available in single, double and triple reduction types in standard ratios from 1 to 1 up to 238 to 1. First reduction is always through spiral bevel gear set while precision shaved helical gears are employed in second and third reductions of double and triple types.

For details write for Catalog SB-50

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as **IEN - 3737**

CONVEYING . . Magnetic elevator lifts small parts for side discharge

Source: PRAB CONVEYORS INC.
19873-77 Mack Ave., Detroit 36, Mich.

Automatic control

One or more permanent magnets assemble in a rectangular non-magnetic head at the bottom of a lift rod in this new Magnavator. The lift rod forms part of an L-shaped arm terminating in a block riding on a vertical shaft in connection with a cam and follower. The block is connected by chain to a small motor driven winch at the top of the assembly.

Action starts with the head lowered by gravity into a parts container where the magnets attract a load of small ferrous pieces such as rivets, nuts, valve stems, piston rings, pins, stampings.

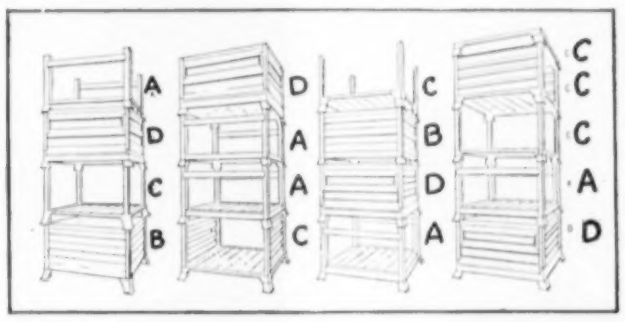
Upward movement is accompanied by rotation in a horizontal plane to bring the magnet assembly over a side discharge chute in elevated position. At this point the non-magnetic head acts as a stripper to remove the parts and let them fall to the discharge chute. This is accompanied by release at the winch so the pick-up assembly returns by gravity for another load.

The company is prepared to supply the equipment in specified lift heights, load capacities and sizes to feed elevated hoppers, transfer work pieces from one conveyor to another in elevated position, feed hoppers on machines, transfer small parts from one machine to another for succeeding operations.

If you write maker identify as **IEN - 3738**

HANDLING . . Four-way steel skid to transport and stack long materials

Source: PHILLIPS MINE & MILL SUPPLY CO.
2500 Jane St., Pittsburgh 3, Pa.



Possible combinations

Phil-Tier Model GC-50 is new unit design of a steel skid. It employs a corrugated deck with four corner stakes permanently welded in place and held on the sides by two steel bars. Load capacity is 2 ton. Tiering capacity is 8 ton. Standard overall height is 30 inches. Two standard sizes are 40 by 48 in. and 48 by 48 inches.

The new unit is the fourth in the company's line to handle loads and to stack them in storage. It is shown at A in the illustration in various arranagements of the Phil-Stax Box B, the Erect-A-Pallet C, and the collapsible Phil-Box D.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

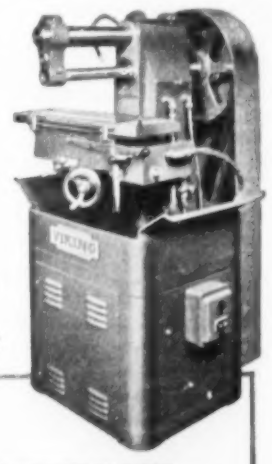
If you write maker identify as **IEN - 3739**

The Versatile

VIKING Hydraulic SPEED-MILL

For conventional and climb milling

IDEALLY SUITED FOR SECONDARY SCREW MACHINE WORK



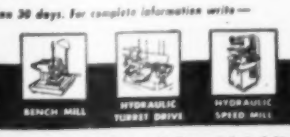
- INFINITE VARIABLE SPEED WITH DIAL-CONTROLLED DRIVE
- AUTOMATIC HYDRAULIC CYCLING
- OVERSIZE DESIGN AND CONSTRUCTION
- HEAVY FLYWHEEL DESIGN GIVES SMOOTHER DRIVE, BETTER FINISHES
- ATTACHMENTS FOR VERTICAL MILLING
- QUICK SET-UP, EASY OPERATION

The new improved Viking Speed-Mill, ideal for secondary operation work in screw machine shops, is the answer to many light, production milling problems. With the Viking, small, light pieces requiring multiple cuts, good finishes, and close limits can be machined quickly, accurately, and economically. Set-ups are fast, operation is easy, even with relatively untrained operators. Automatic hydraulic cycling and infinite spindle speed variations assure higher production efficiency and longer cutter life.

BRIEF SPECS: 7-5/8" x 24-1/4" table; Cutting length up to 9"; transverse movement, 2-5/4", vertical adjustment, 10", 2" dia. spindle; variable speeds 50 to 5600 r.p.m. Accommodates cutters up to 6" diameter.

Emergency delivery in less than 30 days. For complete information write—

VIKING Industries



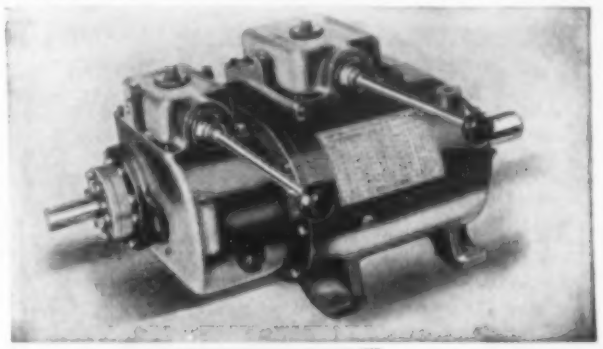
220 MONTAGUE ST. • ROCKFORD, ILLINOIS

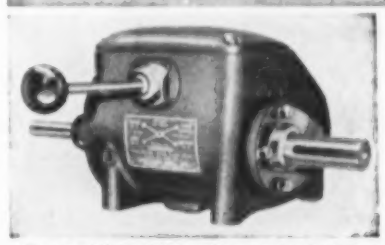
If you write maker identify as **IEN - 3740**

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. CAPACITY 50 HP.

In geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type. Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Starters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. — 5400 SCOTTEN — DETROIT, MICHIGAN

If you write maker identify as **IEN - 3741**

YALE *WORKSAVERS*

give big truck power... where big trucks can't go

• Where size and weight rule out big trucks, YALE WORKSAVER ELECTRIC TRUCKS take over. Yes, YALE WORKSAVERS save industry time, manpower and money where low-load capacity flooring, unreinforced elevators and ramps had previously restricted materials handling operations to back-breaking manual moving, lifting and stacking.

YALE WORKSAVERS give big truck advantages...big truck versatility . . . at small truck cost! Features include forward and reverse power travel—hydraulic lift—complete range of use-extending attachments. Contact your local Yale Representative for a demonstration of the WORKSAVER line in your own plant . . . at your own time.

YALE*

**Registered trade mark*

MATERIALS HANDLING EQUIPMENT

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 364
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.

Please have your local representative call for an appointment.

Company_____

Name_____ Title_____

Street_____ City_____ State_____

In Canada write: The Yale & Towne Mfg. Co., Box 337—Postal Station "A," Toronto

Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks • Hand and Electric Hoists • Pul-Lifts

If you write maker identify as **IEN - 3743**

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as **IEN - 3744**

WEBB TOWVEYOR*

for FASTER, EASIER and SAFER MATERIALS HANDLING

FASTER—Towveyor chain automatically picks up load when pin attached to truck is dropped into slot. Material is delivered to destination without wasted traveling time.

EASIER—Minimum handling of loads by personnel—trucks engage Towveyor chain or are disengaged at any point with a simple lowering or raising of towing pin.

SAFER—Clear floors with no obstacles for employees to walk or truck over, and there are no overhead chains or supports to present safety hazards.

Cut your handling costs with a "Towveyor" system that will speed up distribution, permit faster filling of orders and easier loading or unloading of freight cars and trucks.

*TOWVEYOR is a registered trademark identifying floor truck conveyors manufactured and installed by the Jervis B. Webb Company.

For Further Information, Please Write To:

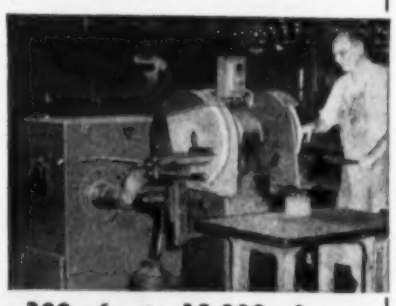
JERVIS B. WEBB COMPANY
8915 ALPINE AVE.
DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES
CONVEYOR ENGINEERS AND MANUFACTURERS

If you write maker identify as **IEN - 3745**

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

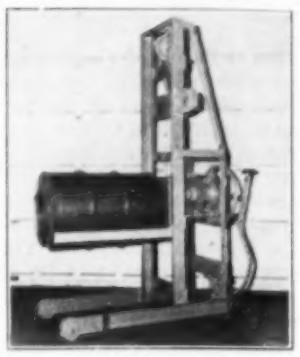
Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as **IEN - 3746**

ELEVATOR . . Portable hand unit to raise and lower loaded steel drums

Source: WEST BEND EQUIPMENT CORP.
218-22 S. Water St., West Bend, Wis.



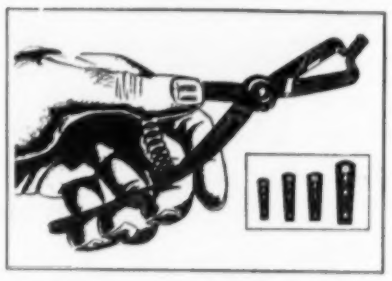
Built to order

Illustrated is new special design of the company's portable elevator, previously described IEN-6922-40. It can be moved from one location to another on two wheels at the end of the load carrying legs and on the jack type steering unit at the rear end. Raising the steering handle permits the rear end to come down solidly on the floor so the elevator will hold in set position. A load is raised by turning a crank wheel connecting to a winch. The upright structure is hinged to permit travel through low doorways should they be encountered.

If you write maker identify as **IEN - 3747**

DRIVE . . Link type V-belt is assembled with a plier type tool

Source: BRAMMER CORP.
684 Broadway, Dept. I, New York 12, N. Y.



Tool supplied with the belt

Brammertool trade names a new tool which the company has developed to assemble and take apart its link type V-belt, previously described IEN-1676-53. The tool enters the cut-outs in the links and spreads them so they can be removed from or positioned over the rivet heads that hold the belt assembly together as a unit.

If you write maker identify as **IEN - 3748**

TRUCK . . Cab assembly for Huskie and Super-Huskie tractors

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.

Operation deluxe

New cab is made with a 12-gage steel body and is designed to be mounted by the user on their own Mercury tractors. Windows provide first class visibility. The glass is shatter-proof. Removable side doors and a rear panel can be specified. Additional attachments, subject to specification, include electric lights, an electric windshield wiper, a heater, defroster and direction turn indicator.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3749**

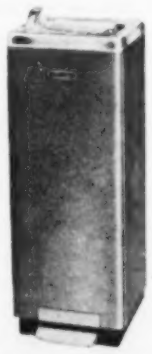
CORDLEY electric water coolers . . . via Graybar

FREE catalog offers important selection data

Send for this illustrated catalog today. Specifications and selection data are included on the wide variety of Cordley air- and water-cooled models, explosion-proof, remote, and bottle-type coolers available nationally via Graybar.

It will pay you to investigate these Graybar distributed Cordley units. All Cordley electric models are backed by a 5-year warranty; they're sure to give long service life. Should a defect occur within the hermetic factory-sealed refrigerant system, the warranty covers replacement of the entire cooler.

Cordley units are available in models for office and plant use under widely varying conditions. For complete information on the Cordley electric water cooler best suited for your purposes, check with your local Graybar Representative. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*



Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

335-124

If you write maker identify as **IEN - 3750**

CESCO *RIGHT . . . before your Eyes!*

CHICAGO EYE SHIELD COMPANY • 2326 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as **IEN - 3751**

CMH REX-FLEX

HIGH PRESSURE
CORROSION RESISTANT
FLEXIBLE METAL HOSE

Stainless steel Rex-Flex is corrugated metal hose designed to convey a wide range of searching liquids or gases at high temperatures. Although light in weight, it is extremely durable and flexible and absorbs prolonged cycles of vibration, flexation and vari-plane motion. Rex-Flex is fabricated in both annular and helical convolutions in a wide range of sizes, complete with fittings.

Write for complete data

CHICAGO METAL HOSE
DIV. FLEXONICS CORPORATION
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as **IEN - 3752**

NEW! Volatile Solvent CARBON MET

A HALOGENATED AROMATIC HYDROCARBON

A specific replacement for toxic Carbon Tetrachloride

Out and out metal dry cleaning solvent and degreaser in ready-to-use "Handy Kit" containing Patented dip and drier basket.

U. S. Pat. 2318842

- **For Liquid Phase Degreasing**
- **Quick Cutting solvent against stubborn dirt and grease.**
  Much Faster Cutting than "Carbon Tet"
  Causes no Rusting . . . Leaves no film
- **Non-Explosive and relatively non-toxic.**
- **Fast, clean evaporation.** • **Non-Corrosive to metals.**
- **Non-Ionic . . Ideal for degreasing and cleaning electrical parts.**

also economical 55 gal. size drum

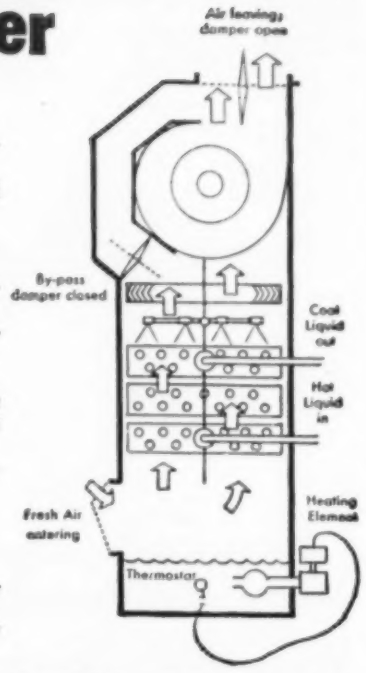
IMMEDIATE DELIVERY 1 PINT OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE, MASS.

120 South Canal St.

If you write maker identify as IEN - 3753

NIAGARA Aero Heat Exchanger



1. Extends quenching capacity without extra water or cooling tower.
2. Quickly pulls down heat at initial peak load of Quenching.
3. "Balanced Wet Bulb" Control holds quench bath at proper temperature, heating if needed to start after shut-down, and cools or heats by automatic control.
4. Saves cleaning expense as compared to cooling tower which picks up acids and fumes from air.

APPLICATIONS

Quench Oils
Cutting Oils
Lubricating Oils
Cooling Water

For help in increasing production, saving of cooling water, write for Bulletin No. 120. Address

NIAGARA BLOWER COMPANY

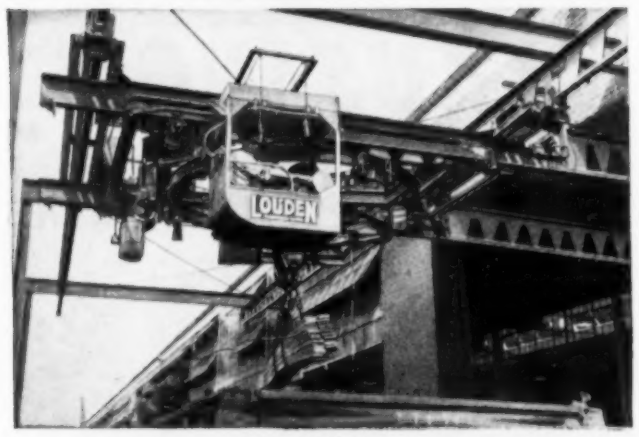
Over 35 Years of Service in Industrial Air Engineering

Dept. EN, 405 Lexington Avenue New York 17, N.Y.

Experienced District Engineers in all Principal Cities of U. S. and Canada

If you write maker identify as IEN - 3754

UNLOADING OR LOADING CARS WASTING YOUR MEN & MONEY?



Louden OVERHEAD HANDLING OFTEN PAYS FOR ITSELF IN A FEW MONTHS BY LETTING 2 OR 3 MEN DO WORK OF A SLOW AND COSTLY "BULL GANG"

Getting things in and out of your plant a problem? Labor hard to find and hard to keep? Handling too slow; machines down time and again waiting for raw stock or parts? Labor costs and demurrage charges driving you mad? **You** need a Louden Crane like the one shown here . . . hundreds of plants have found them the **perfect** answer to their railroad siding problem. And many use them to load and unload open body trucks as well as gondola and flat cars.

Loading docks can be eliminated entirely because materials received can be moved directly to warehouse or start of fabrication on the overhead tracks, to any location inside building. Conversely, such a system can deliver finished products into waiting cars or trucks without intermediate handling. Length of runway can cover entire siding or truck lane, if desired. Design can meet any need for weight or bulk. Ask a Louden engineer about **your** problem. Wire or write **now.**

FREE ILLUSTRATED BOOK

Case histories telling how Louden Handling Systems have saved time and money for widely different kinds of industries are described and pictured in a new 56-page book called, "Economical Material Handling". Write for it.

THE LOUDEN MACHINERY COMPANY

7411 S. Superior Ave., Fairfield, Iowa

Louden

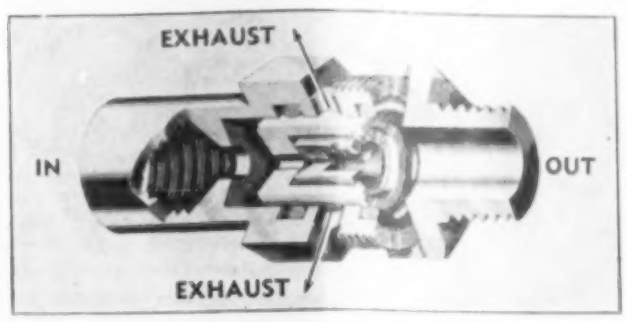
OVERHEAD MATERIAL HANDLING

Visit Our Booth 510 at the National Materials Handling Exposition

If you write maker identify as IEN - 3756

VALVE . . Quick release design "dumps" air from clutch pressure line

Source: DEUBLIN CO.
1153-57 Waukegan Road, Glenview, Ill.



Guaranteed free from chatter

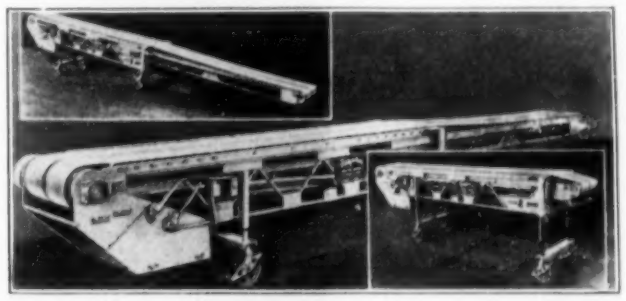
Primary application for this new release valve is in the pressure line from a control valve to a rotating pneumatic clutch or brake. The new unit is air held in closed position, with reference to the radial release ports, when the control is operated to engage the clutch. The air then travels through the valve to the clutch. It opens quickly to "dump" the air pressure in the line when the control valve is turned to disengage position.

The assembly is symmetrical about its center so it can be installed in a rotating line. A built-in orifice eliminates the possibility of pressure equalization that might result in chattering. The double piston design operates smoothly and positively. Pressure rating is to 250 pounds. Application can be made on clutches handling 1,500 horsepower or less.

If you write maker identify as IEN - 3757

CONVEYING . . Extensible belt unit, wheel mounted, lengths to 25 feet

Source: A. B. FARQUHAR DIVISION
140-44 N. Duke St., York, Pa.



Retracts into itself

Two sizes in this new Expand-O-Veyor include retracted lengths of 11 and 15 ft. with extended length at 18 and 25 feet. Both units are suited for loading and unloading trucks. One end can be fixed to an existing line and the other extended or retracted as the truck becomes empty or full. Height adjustment can be made at either end.

The drive employs an 8½-in. rubber-faced pulley. Shaft mounting is on sealed factory lubricated ball bearings except at the feed end, where the ball bearings are self-aligning units. Four swivel casters with a foot lock support and secure the conveyor in operating position. The drive motor rates ¾ hp. and mounts an angle gear-type head. Standard belt width is 16 inches. Standard operating speed is 80 fpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3758

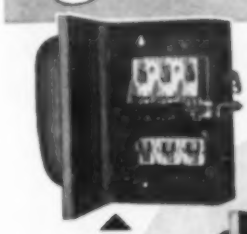
A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼ to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works**, 26 Hancock Street, Quincy, Mass.

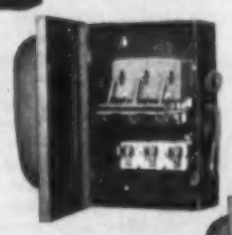
If you write maker identify as IEN - 3759

3 LINES OF SAFETY SWITCHES for 3 COMPLETELY DIFFERENT MARKETS



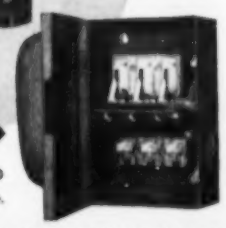
one line can't do two or three jobs without compromising price and performance!

GENERAL PURPOSE



INDUSTRIAL

HEAVY DUTY INDUSTRIAL



Write for Bulletin 3100. Address Square D Company, 6060 Rivard St., Detroit 11, Michigan.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 3760

Send for this Free Booklet

It tells WHY . . . TRICO *"Powder-Packed" RENEWABLE FUSES Give Three Times the SERVICE*

"The Inside Story of TRICO Renewable Fuses"

Booklet 206-A . . . 24 pages of interesting fuse facts . . . Quick reading . . . Informative . . . Profusely illustrated . . . Shows all the comparative facts about TRICO (VS) "BARE-LINK" types . . . Explains why only TRICO "Powder-Packed" fuses eliminate:—

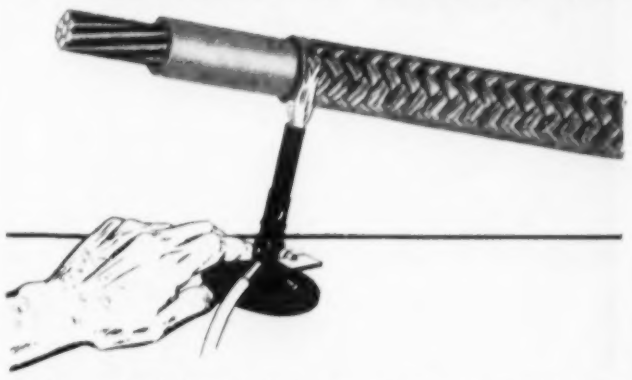
- Needless Fuse Blowing.
- Burning of Fuses And Clips.
- Arcing At Contacts.
- Wasted Power.
- Unnecessary Shutdowns.
- Dangerous Fire And Explosion Hazards.

No Obligation

TRICO FUSE MFG. CO. MILWAUKEE, WIS

If you write maker identify as IEN - 3761

for control wiring in hot spots . . . OKONITE'S OKOTHERM



Okotherm insulation, a silicone rubber compound developed by Okonite, maintains excellent electrical and physical properties over an extremely wide temperature range. High moisture resistance is another Okotherm characteristic. From printing presses to jet engines, Okotherm has successfully replaced other types of heat-resisting wires with overall savings as high as 88%.

Write today for further information on the advantages of Okotherm wherever high temperatures present a problem. The Okonite Company, Passaic, New Jersey.

75 ANNIVERSARY

OKONITE insulated cables

1629

If you write maker identify as IEN - 3762

WE PRODUCE CIRCULAR SHAPES! CHEAPER and BETTER

With our KNOW-HOW and experienced organization, we can supply circular shapes CHEAPER AND BETTER. Have been doing this kind of work since 1921. Can produce shapes of all types, using strip or square or round stock also tubing and channels. Made in sizes up to ½" square bar stock and in strips from 1/16" thick to 1½" wide. In many cases we have been able to replace castings by using strip or bar stock. This eliminates machine work and reduces cost. In addition provides longer wearing parts.

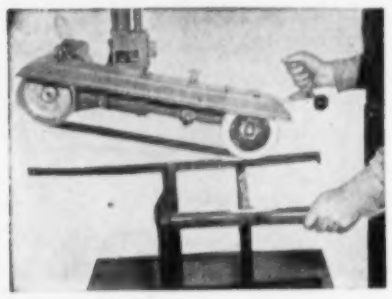
MADE TO YOUR SPECIFICATION

Why not submit your circular shape problems to us? It is possible that we can supply better parts for less money since we specialize in this type of work. All parts are made to your specifications.

Write to

THE AUTO-DIESEL PISTON RING CO.
3139 Superior Avenue • Cleveland 14, Ohio
"RINGS and SHAPES Since 1921"

If you write maker identify as IEN - 3763



FOR THE FINISHING TOUCH

You can't beat this new 6-72 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, removing finish blemishes, etc. Light—but rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too—and it may suggest an entirely new application in *your* plant. If so, write us about it—we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN - 3764

Now find motor coil shorts POSITIVELY and INSTANTLY...

New CROWN INTERNAL GROWLER

• Anyone can use it
• No Chance for Error!
• Meter Tells the Story!
• For AC Motors

POSITIVE . . . meter needle indicates short in coils of stators or armatures and reveals loose bars in rotors

FAST . . . No time wasted with hacksaw blades or guesswork. "Pinpoints" the location.

EASY . . . no training or experience needed. Meter gives the answer.

• CHECKS 115V. to 440V; stators 6" and up I.D.; armatures or rotors 6" to 14", operates on 115 V. AC.

MAIL FOR COMPLETE DATA

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam Street
Woodstock, Illinois

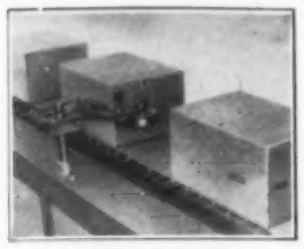
Please send full catalog information about the New Crown Internal Growler to:

Name_____
Company_____
Street_____
City_____ Zone____ State_____

If you write maker identify as IEN - 3765

MARKING . . Roll attachment prints on front and side of containers

Source: ADOLPH GOTTSCHO INC.
6-D Terminal Road, Hillside 5, N. J.



Marks two faces

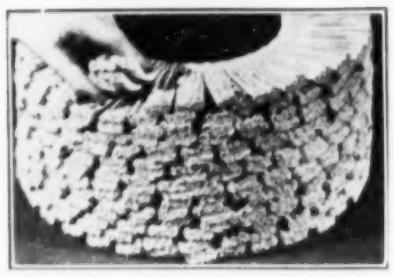
Rolacoder 500 is a new roll type marking attachment to apply on the side of a conveyor carrying filled containers at spaced intervals. The assembly mounts an ink reservoir and type wheel on a spring backed L-shaped arm. It mounts so the roll first contacts the leading face of the container, then moves around to the side to put identical markings in two positions.

Type are interchangeable in the roll. They measure ½ in. in height. Any combination of eight letters or figures can be employed. The visible ink reservoir holds sufficient fluid ink for 8 hr. of steady operation.

If you write maker identify as IEN - 3766

POLISHING . . Sisal buff for hand and automatic machines

Source: GEO. R. CHURCHILL CO.
7509 Fayette St., North Quincy 71, Mass.



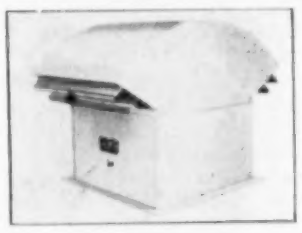
Cool, efficient

Type 20-RD is a new buffing wheel assembly made up of individual flexible "fingers." Each finger is an enclosure of tightly twisted sisal twine. Only the ends of the sisal come in contact with the work. Sizes range from 6 to 18 in. in diameter.

If you write maker identify as IEN - 3767

VENTILATING . . Power exhauster discharges bad air, fumes through roof

Source: CHELSEA FAN & BLOWER CO.
637-41 South Ave., Plainfield, N. J.



Ask for Bulletin 511

Sizes are 12 to 48 in. in this new Type RVD, and RVB, motor driven exhauster. Capacities are 1300 to 20,000 cfm. on free delivery, 860 to 14,500 cfm. against ⅛ in. of static pressure. The two types employ ball bearing enclosed or explosion proof motors with direct or belt connection to the dynamically balanced fan.

The housing is made of steel with a noise deadening coating. It mounts louvers that open when the fan is started and close when it stops. These louvers can be applied on the outside, as shown in the illustration, or at housing base inside.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3768

Chip Away... PAINT RUST SCALE

with AURAND CLEANING TOOLS

Clean off accumulations of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

Two sizes in electric or pneumatic models.

FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 3769

FOR BETTER HANDLING

Look under "Trucks" or "Casters" in your classified phone directory for your nearest Nutting representative. Or write direct for Junior Catalog 52G.

SINCE 1891 Nutting

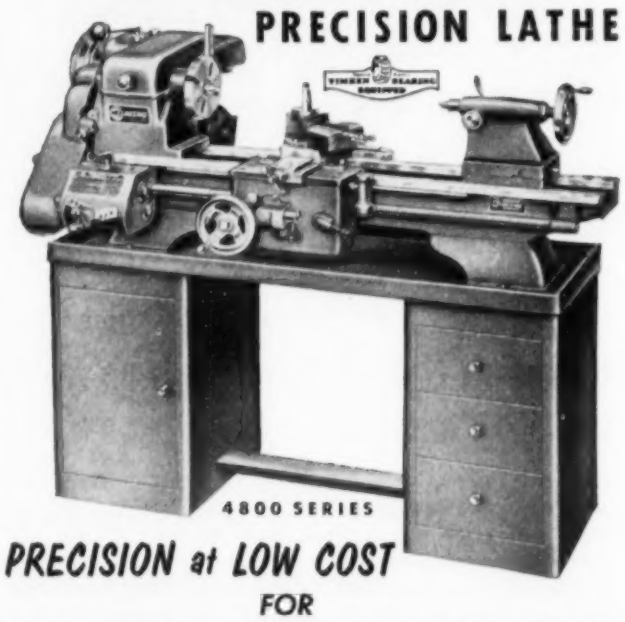
TRUCK & CASTER CO.
2014 Division St. Faribault, Minn.

If you write maker identify as IEN - 3770

COUNTERSHAFT CLUTCH and BRAKE SAVE TIME and INCREASE PRODUCTION

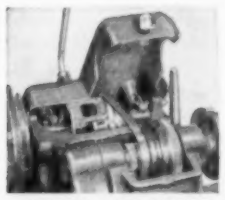
CLAUSING

12" HEAVY-DUTY PRECISION LATHE

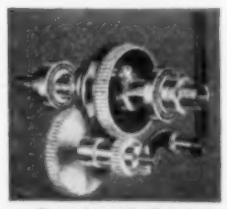


4800 SERIES

PRECISION at LOW COST FOR TOOL ROOM OR SHOP!



CLUTCH AND BRAKE EQUIPPED SPINDLE COUNTERSHAFT



TIMKEN BEARING EQUIPPED SPINDLE

HEAVY-DUTY PRECISION V-BED

This Clausing lathe has a built-in countershaft with friction clutch and brake that permit instant starts and stops of the headstock spindle without stopping the motor. You step up production, save many costly minutes every day with a Clausing heavy-duty precision lathe.

And this is but *one* of the many extra-value features you get with a Clausing. Others include Timken tapered roller bearings equipped spindle; wide heavy bed with Vee-ways and flat ways precision ground; automatic apron with splash lubrication; complete V-belt drive; massive construction — 36" between center lathe weighs 535 pounds.

Prices start at $420.00! The Clausing 4800 is truly the greatest 12-inch lathe value. For complete details, see your dealer or write for catalog for additional information.

Atlas CLAUSING

CLAUSING DIVISION
ATLAS PRESS COMPANY,
4-105 N. PITCHER ST. • KALAMAZOO, MICH.

If you write maker identify as IEN - 3772

A CENTER-LINE-MOUNT PUMP FOR HEAVY DUTY SERVICE IN CHEMICAL PLANTS AND REFINERIES

PEERLESS PUMPS

SOME CHARACTERISTICS OF THE TYPE PR PUMP
CAPACITIES . to 1000 gpm
HEADS . . . to 625 ft.
TEMP. RANGE . to 850°F.
CASE PRESSURES to 600 psi
LIQUID END can be furnished in any suitable alloy

For Tough, High Temperature, High Pressure Pumping Jobs

Write today for new Peerless Bulletin No. B-1605. Completely describes and illustrates the modern Peerless process pump for handling hydrocarbons, water and chemical solutions at elevated temperatures and pressures.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 3773

10 U. S. Royal adhesives cover 90% of all industrial uses!

MADE FROM 4 BASE RUBBERS
RECLAIM NEOPRENE
GR-S BUNA N

Free booklet tells how to pick the right adhesives

This booklet makes you a specialist in adhesives. It gives you the facts a specialist needs to know about each adhesive in the U. S. Royal "10-90" series. It shows you how to select the adhesive whose characteristics best suit your requirements, according to base, thinner, viscosity, weight, bonding range and general use. And remember that the U. S. Royal line *takes care of 90% of normal adhesive requirements.* For unusual cases, "U. S." offers a complete line of "specials"—designed for particular bonding problems. Write to address below for your copy of the U. S. Royal Adhesive Booklet.

"U.S." Research perfects it
"U.S." Production builds it
U.S. Industry depends on it

U.S. RUBBER

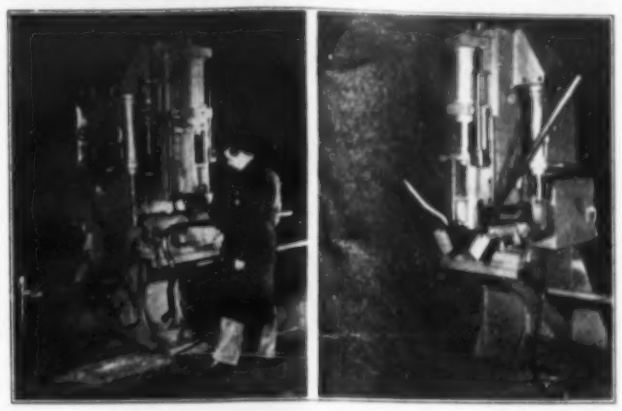
UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Products • Molded and Extruded Goods • Protective Linings and Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

If you write maker identify as IEN - 3775

BENDING . . Hydraulic machine to make multiple bends in steel tube

Source: PINES ENGINEERING CO.
638 Walnut St., Aurora, Ill.



For bends in any direction

The main cylinder, located centrally at the front of this new 20-ton machine, is flanked on the two sides by additional hydraulic cylinders crank-connected to wing-type dies mounted on the machine bed. The dies can be adjusted equally on both sides of center and the back-up pressure provided by the cylinders can be set at any point between ½ and 15 ton. The machine will make a 180-deg. bend in 2-in. steel tube with 0.083-in. wall thickness when the center line radius is 5 in. or more. Primary application is in bending exhaust and tail pipes for motor vehicles.

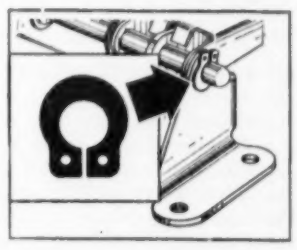
Pressure is supplied by a 2,000-lb. Vickers pump driven by a 20-hp. motor. The pump takes oil from a 100-gal. reservoir with which it is mounted in the housing of the machine. Operation is on 220/440-volt three-phase 60-cycle ac. Controls are on a 110-volt 60-cycle circuit operating through a transformer from the power line. On the left hand side of the housing is a turret-type multiple stop that can be set up for any number of bends to a maximum of ten. This turret unit rotates each time the machine ram comes down. It can be set to return to starting position after any desired number of movements.

Downward motion of the ram contacts a limit switch with the stop and reverses the controls so the ram retracts. Thus the bending operations are in automatic sequence after the operator starts the machine by momentary contact on a foot switch. The turret can be picked out of its position and another one, for a different set-up, put in its place to meet the requirements of changing work pieces.

If you write maker identify as IEN - 3776

FASTENING . . Spring steel ring grips to lock on an ungrooved shaft

Source: WALDES KOHINOOR INC.
47-18 Austel Place, Long Island City 1, N. Y.



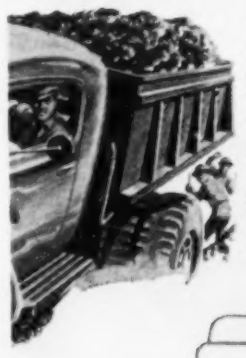
Samples on request

Grip Ring, Series 5555, is a new design in the Truarc line of fastenings. It is held in a Truarc plier to open for free movement along a shaft. Releasing the plier permits the ring to lock itself tightly on the shaft. No shaft groove is needed. Sizes range from ⅛ to ⅜ in. in shaft diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3777

McDonald
REVERSALARM
keeps the road clear—BEHIND!



To protect workers in the path of backing-up trucks, equip your rolling stock with McDonald Reversalarm! Its powerful gong automatically sounds with unmistakable authority within the truck's first 8 inches of backward motion. Completely automatic—works even without truck motor running! Sturdy, weatherproof Reversalarm lasts for years — pays for itself many times over by preventing costly accidents.

WRITE FOR BULLETIN & PRICES

Write for Bulletin and Prices

Installing Reversalarm is easy. Its automatic interrupter switch connects to transmission speedometer cable take-off. Operates on 6- or 12-V systems.

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 3778

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 3779

We tried FUSETRON dual-element FUSES on our Crane Motor Circuts... They Reduced Fuse Blows From 4 or 5 a day to only Three in Seven Months

Chas. A. Gardner, Chief Electrician
Nicholson Terminal & Dock,
Ecorse, Detroit Michigan

PROBLEM

"We have many overhead cranes that operate on 24 hour schedules. The severe service when loading and unloading ships throws a tough load on the motors—this caused us a lot of grief due to fuses blowing 4 or 5 times a day. Each blow caused a shutdown that stopped work and made men idle.

SOLUTION

"In testing Fusetron fuses to see if they would help us, we selected one crane and inserted Fusetron fuses in that circuit for one 8 hour shift. At the end of the shift we replaced the Fusetron fuses with the ordinary renewable fuses. Then we compared the down time of the crane due to fuse blows.

"To be sure the fuse blows weren't due to the operator, we changed around and would run the Fusetron fuses on two shifts and the old fuses on one.

"The results always came out the same. The Fusetron fuses would stand up under the hard service—and the ordinary fuses would not. As a result, we changed all fuses on our crane circuits to Fusetron fuses. In seven months we have had only 3 shutdowns of our cranes due to fuses blowing."

Don't Risk Losses!

One **needless** shutdown . . .
One **lost** motor . . .
One **destroyed** switch or panel
One **burned out** solenoid . . .
May cost you far more than replacing every ordinary fuse with a Fusetron dual-element Fuse.

Write for complete data.

BUSSMANN MFG. CO., University at Jefferson, St. Louis 7, Mo. (Division of McGraw Electric Co.)

FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

If you write maker identify as IEN - 3781

CAMBRIDGE Moisture Indicators

Cambridge Moisture Indicators are accurate, rugged instruments built for continuous shop service to indicate moisture content of various hygroscopic materials. Insertion model has measuring element enclosed in a blade. Surface model has the element mounted on under side for surface contact. Adjustable pointer is provided for fixing reference points of surrounding air.

Surface Model

Insertion Model

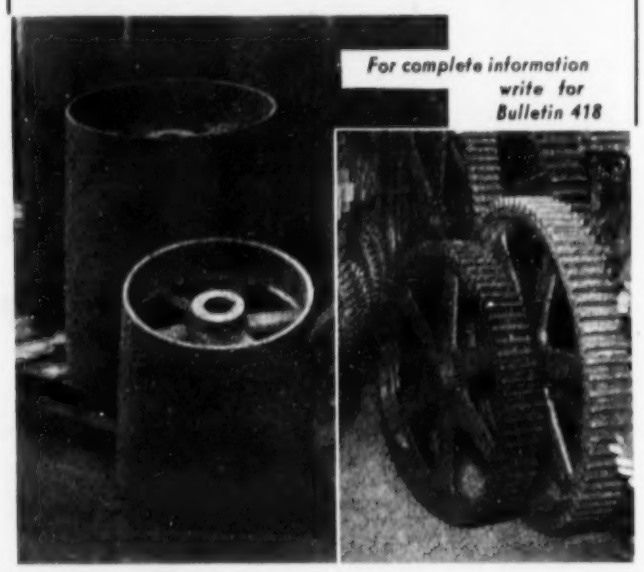
For use in Hat, Printing, Textile, Food industries and in processing Paper, Wool, Cotton, Rayon, Fur, Cereals, etc.

Send for literature

CAMBRIDGE
INSTRUMENT COMPANY, Inc.
3710 GRAND CENTRAL TERMINAL NEW YORK 17, N. Y.
Pioneer Manufacturers of
PRECISION INSTRUMENTS

If you write maker identify as IEN - 3782

BELT CONVEYORS, PULLEYS, GEARS



THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio
IF IT'S MINED, PROCESSED OR MOVED . . . IT'S A JOB FOR JEFFREY!
sales offices and distributors in principal cities

If you write maker identify as IEN - 3783

WASHERS and STAMPINGS

Geared to Industry's Production Demands Since 1887

MILWAUKEE WROT WASHERS

Over a period of 65 years, producing standard and special washers of all types for all industries, we have made up more than 25,000 sets of dies . . . used in the production of washers which are stocked in thousands of different sizes. On special orders we will make up dies to your specifications.

Let us quote on your requirements for washers and stampings . . . covering fabrication in any material and any finish . . . machined, heat-treated or surface ground, as may be specified.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2207 S. BAY ST., MILWAUKEE 7, WIS.

If you write maker identify as IEN - 3784

TESTING . . Electronic instrument detects and locates noise, vibration

Source: ANCO INSTRUMENT DIVISION
4252-56 W. Arthington St., Chicago 24, Ill.

Both eyes and ears

Vibration or sound impulses are transmitted to this new Model V Elec-Detec instrument through a probe which the operator contacts with a suspected source. The instrument is insensible to airborne noises. The impulses register in earphones and on a dc. milliammeter in the new assembly. Thus the operator can "see" as well as hear. Typical applications are in checking performance of bearings, pistons, gears, ratchets, cams, clutches, valves, enclosed mechanisms.

Operation is on one B battery and two A batteries. Sensitivity is within 2 decibels in a range from 100 to 4,000 cycles per second. It is within 3 decibels from 4,000 to 8,000 cycles. A germanium crystal diode in the meter circuit provides dc. to operate the meter.

If you write maker identify as IEN - 3785

PRESS . . Open back inclinable, 28 ton, 3-in. stroke, 300 rpm.

Source: WALSH PRESS & DIE CO.
4743 W. Kinzie St., Chicago 44, Ill.

Ask for Bulletin 951

Model 28X is a new assembly in the company's line of inclinable presses. It features a forged crankshaft with ground finish, hand scraped bearings including the slide, and a solid web flywheel. The press can be equipped with the company's safety control for blanking, continuous running, forming, second operation work. The inclinable housing locks in desired position to 45 degrees.

The bed measures 21¾ by 14½ inches. Distance between the uprights is 9½ inches. Die space, with the slide down and adjustment up, is 9½ inches. This is based on the standard 3-in. stroke and 1½-in. adjustment. Plain and back geared assemblies are available.

Identify as IEN - 3786

Westinghouse Electric Corporation paid about $7 million in 1952 to officers of the company, staff executives, department managers, division and district apparatus managers, general managers of subsidiary companies, department heads, supervisors and foreman in policy making jobs, all according to an editorial item recently in Iron Age. The payment was made under a plan of awards for management improvement, independent of customary awards to workers in production lines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

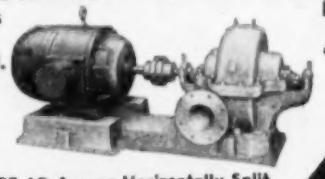
If you write maker identify as IEN - 3787

Faithful Performance on Important Jobs

— such as water supply, brine circulation, booster service, white water and overflow, hot well, makeup water, etc., etc.

Capacities to 1,200 G.P.M.

Heads to 460 Ft.



PUMPS *"by Aurora"*

TYPE-AD Aurora Horizontally Split Case, Back-to-Back Impellers, Two Stage Centrifugal Pump. Particularly suited to clear water and low viscosity liquids not containing solids. *Write for* BULLETIN 106

For Every Purpose

APCO TURBINE-TYPE PUMPS are unbeatable on low capacity, high head duties.

AURORA CENTRIFUGAL PUMPS are available in many types and sizes —all noted for their streamline coordination between impellers and shells.

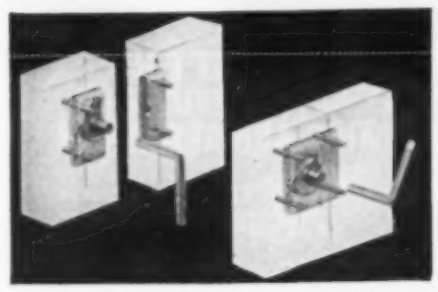
See Our Exhibit **OIL SHOW TULSA** MAY 14-23

Write for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA *Always* PUMPS — **AURORA PUMP COMPANY**
SUBSIDIARY OF THE NEW YORK AIR BRAKE COMPANY
52 Loucks Street, Aurora, Illinois

If you write maker identify as IEN - 3788



Serrated, tapered cam engages lip — draws panels tightly together when turned by any hand tool.

How to fasten panels securely —and take them apart easily

Roto-Locks fasten demountable panels quickly and securely —at right angles or butt joint. Just turn the tapered cam to lock, turn again to unlock. Check these other Roto-Lock features, too:

1. Roto-Lock carries *both* heavy shear and tension loads.
2. Exerts enough pressure to form an air- and water-tight seal when gaskets are used.
3. Fastens in any mis-aligned or semi-open position.
4. Recesses *completely* into panels.
5. Has no springs or delicate mechanical parts.

Portable shelters, air freight and cold storage shipping containers, walk-in coolers, demountable furniture and scaffolding are a few of the many products using Roto-Locks.

Write today for catalog.

SIMMONS FASTENERS
SPRING-LOCK • QUICK-LOCK • ROTO-LOCK
Simmons Fastener Corp., 1758 N. Broadway, Albany, N. Y.

If you write maker identify as IEN - 3789

If you write maker identify as IEN - 3790

HERE'S HELP TO UNDERSTAND YOUR PUMPING PROBLEMS BETTER

Write for "Studying the Installation" Bulletin TS-3 F

This 8-page booklet, "Studying the Installation," is yours for the asking. It contains important facts you should know and consider, when selecting the proper pump, and when making an efficient, successful pump installation.

VIKING — AN HONORED NAME IN PUMPING

See Our Catalog In SWEETS

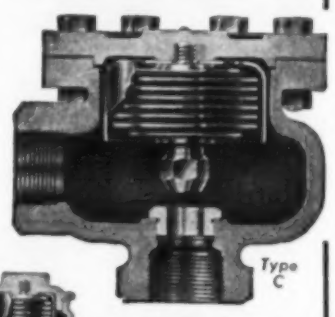
Viking PUMP COMPANY
Cedar Falls, Iowa

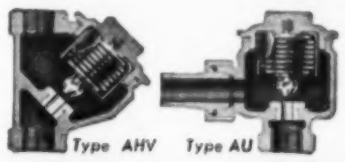
If you write maker identify as IEN - 3791

NICHOLSON TRAPS

STOP TEMPERATURE FLUCTUATION LOSS

The unusual effectiveness of Nicholson steam traps in discharging air as well as condensate was again proved recently by a large maker of welded products. Costly temperature fluctuation of the presses was eliminated by Nicholsons. Also widely used for such critical applications as jacketed kettles. 5 types; for process, heat, power; sizes ¼" to 2"; pressure to 250 lbs.



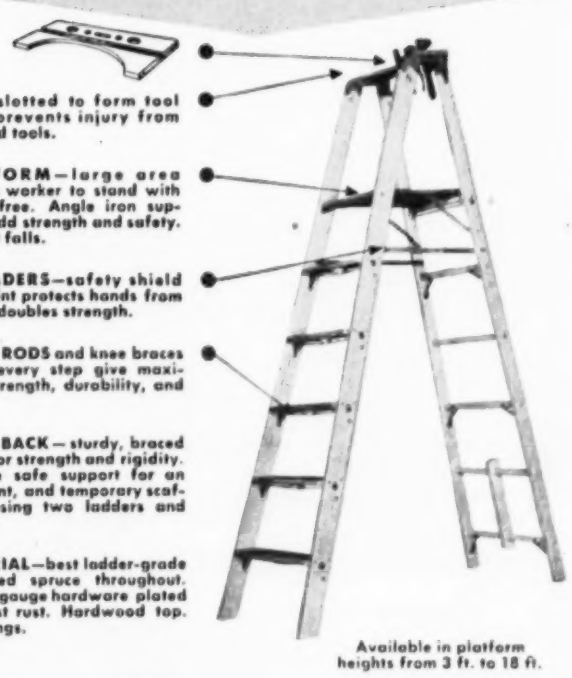


BULLETIN 152
159 Oregon Street
Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 3792

Prevent Accidents... with the SAFEST STEP LADDER made...



TOP—slotted to form tool rack; prevents injury from dropped tools.

PLATFORM—large area permits worker to stand with hands free. Angle iron supports add strength and safety. Prevent falls.

SPREADERS—safety shield over joint protects hands from injury, doubles strength.

TRUSS RODS and knee braces under every step give maximum strength, durability, and safety.

RUNG BACK—sturdy, braced rungs for strength and rigidity. Provide safe support for an assistant, and temporary scaffold, using two ladders and stage.

MATERIAL—best ladder-grade air dried spruce throughout. Heavy gauge hardware plated to resist rust. Hardwood top. Ash rungs.

Available in platform heights from 3 ft. to 18 ft.

GOLD MEDAL SAFETY PLATFORM LADDER

Here is a ladder that will cut accidents in your plant as no other ladder can. That's because it's the *safest step ladder ever made.* It speeds work too—the 14" x 19" platform builds confidence, enables men to work in any direction safely; the rung back supports a helper.

Tested and approved by Underwriters' Laboratories, Inc. Conforms to ASA and all local safety codes.

"GOLD MEDAL" LADDERS FOR EVERY PURPOSE

Single, Step and Extension ladders of all types and sizes. Wood or magnesium. Highest quality for long life and incomparable safety.

FOR FULL INFORMATION WRITE TODAY FOR CATALOG L-71.

Gold Medal Ladders Scaffolding ®

for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.

38-21 - 12th Street, Dept. IEN, Long Island City 1, N. Y.

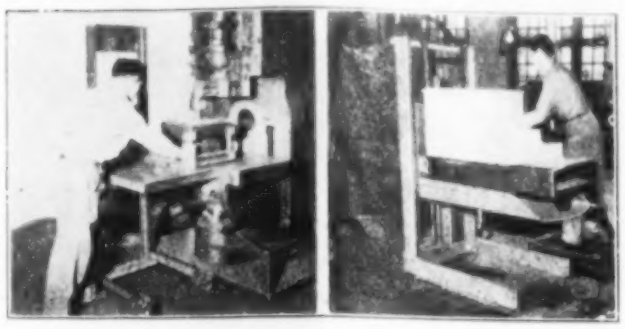
See Your Telephone Directory for Nearest "Gold Medal" Distributor

Branches in All Principal Cities

If you write maker identify as IEN - 3794

ELEVATORS . . Portable assemblies, hand and power operation as specified

Source: LEWIS-SHEPARD PRODUCTS INC.
190 Walnut St., Dept. R-7, Watertown 72, Mass.



Not subject to fatigue

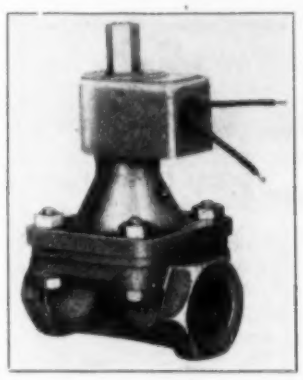
Illustrated are two new assemblies in the company's line of hand and power operated portable elevators. One man can handle tools weighing to 1,000 lb. with the hand operated unit shown to the left. He turns a crank to raise and lower the load. Each revolution raises a 500-lb. load through 3 inches. The 500-lb. assembly has a 24 by 24-in. platform. The 1,000-lb. size measures 30 by 24 inches. The platform holds in any elevated position by means of a positive brake.

To the right is a motor-driven assembly to elevate work to a desired position and then to vary this position in small increments. Control centers at foot switches for up and down movement. Controls govern and safeguard the action. This elevator will handle loads to 4,000 pounds.

If you write maker identify as IEN - 3795

VALVE . . Solenoid operated pilot acts on Saunders patent diaphragm

Source: AUTOMATIC SWITCH CO.
379-D Lakeside Ave., Orange, N. J.



Ask for Bulletin 8336

Illustrated is a new combination of one of the company's solenoid-operated pilots and a Saunders patent diaphragm valve to employ pressure from a shop source, either air or liquid, as the valve-operating element or medium.

The solenoid controls application or release of the shop pressure on the diaphragm to close or open the main flow line. The valve is suited for handling corrosive liquids and gases. It is available in a sanitary design for food products, particularly those containing solids. The valve body can be made of cast iron, bronze or stainless steel. Pipe sizes range from ½ to 2 inches. The solenoid can be specified for operation on 110 or 220 volt ac. or 110 volt dc. in standard assembly.

Maximum operating temperature is 180 deg. F. The valve is available in threaded or flanged construction. Heights range from about 6¼ to 8⅝ in. for the threaded design and from 7⅜ to about 10 in. for the flanged assembly. Operating pressure is to 125 or 150 pounds. The operating source pressure must exceed line pressure for satisfactory operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3796

PAGE FENCE - Since 1883

• AMERICA'S FIRST WIRE FENCE •

Could you **blame** yourself if failure to safeguard property resulted in loss? After all, isn't property protection a responsibility of all management? Security is a job for Page Chain Link Fence, available in heavily galvanized Copper-Bearing Steel, rust-immune Stainless Steel or corrosion-resisting Aluminum. But PAGE means more than a quality product. It is a complete fence service, performed by more than 100 firms having technical training and fence erecting know-how, and conveniently located throughout the country. For illustrated data and name of firm nearest you—

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN - 3797

REDUCE HANDLING of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed — without disturbing any other bin. *Stackbins*—individual hopper-fronted stacking bins, slide like drawers in *Stackracks* — individual units which lock together to form racks of any size, shape or capacity.

STACKBINS IN STACKRACKS

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 3798

Over Half of America's Top Companies Use "Speed Sweep"

THE BRUSH WITH THE STEEL BACK

BECAUSE it sweeps faster and cleaner, and outlasts ordinary brushes 3 to 1, Speed Sweep has become the No. 1 sweeping tool of American Industry — used by over 50,000 firms. Whether you use a few or a lot of brushes, you'll find it pays to switch to Speed Sweep.

Write for styles, sizes and prices.

MILWAUKEE DUSTLESS BRUSH CO.
MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN - 3799

STOP "Spec" hunting with new Frasse chart

THE NEW Frasse chart on carbon steel "specs" permits you to identify a steel requirement in seconds. It saves you valuable time normally lost hunting through individual "specs."

Compiled by Frasse Technical Service, the chart shows chemical analysis requirements for each of 60 Military, Army, Navy, Aeronautical, and Federal specifications. Also lists specified forms (sheets, bars, etc.) and nearest corresponding SAE, AISI and AMS type numbers.

You can tack it on the wall, file it in your desk drawer, or slip it under glass for ready reference. Send for your free copy of this handy chart today.

Call FRASSE 1st for Alloy, Stainless and Carbon Steels and Tubing

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

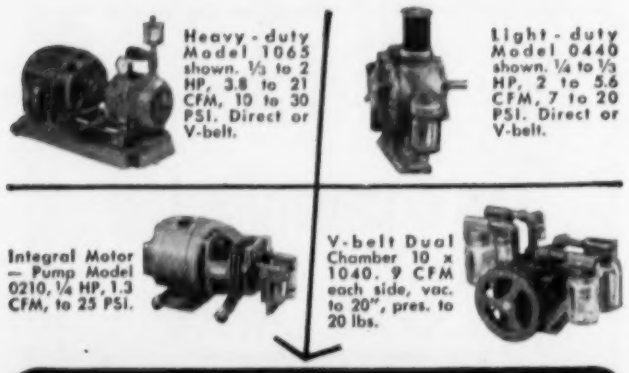
Lyndhurst • Philadelphia • Buffalo • Syracuse

If you write maker identify as **IEN - 3800**

YOUR local Johnson Distributor is prepared to furnish any of these bearings and bearing metals. He stocks a complete line . . . and is supplemented by a huge Johnson warehouse stock to aid in prompt delivery. Write for the new Johnson Bearing Catalog.

JOHNSON BRONZE CO.
476 S. Mill St., New Castle, Pa.

If you write maker identify as **IEN - 3801**



better appearance . . . performance
→ FOR YOUR PRODUCTS with GAST AIR COMPRESSORS

Offer your customers better performance, better appearance! Specify Gast rotary-vane Air Compressors as original equipment where compressed air of 10 to 30 lbs. is needed. Select from 1.3 to 24 CFM range — numerous combinations. Precison built; integral-motor, V-belt or direct drive models; standard accessories.

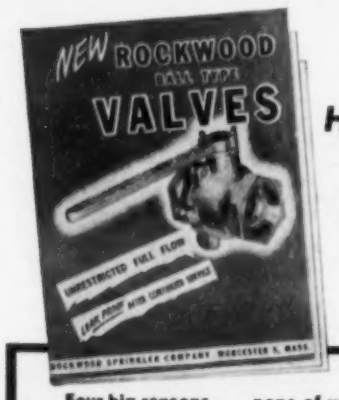
Investigate! See why Gast Air Compressors give you specific advantages for aerating, atomizing, blowing, liquid displacing, etc.

Write for Catalog and Application Ideas Booklet!

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hickley St., Benton Harbor, Mich.

If you write maker identify as **IEN - 3802**



Booklet tells HOW and WHY ROCKWOOD BALL VALVES OUTPERFORM THEM ALL

Four big reasons . . . none of which can be overlooked.

1. **They open and close quick and sure.**
2. **They're leakproof.**
3. **Stay leakproof.**
4. **Require no maintenance. And they assure full round flow of the fluid.**

Bulletin V-4 Tells All

. . . How in industry after industry this superior valve lives longer. Keeps operating costs low. Chemical, paper, textile, petroleum, food and many other fields demanding continuous operation rely on Rockwood.

Get details on the new advances in ball valve applications in many industries. No obligation. Write for Bulletin V-4 to Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

Tested by Underwriters' Laboratories, Inc.

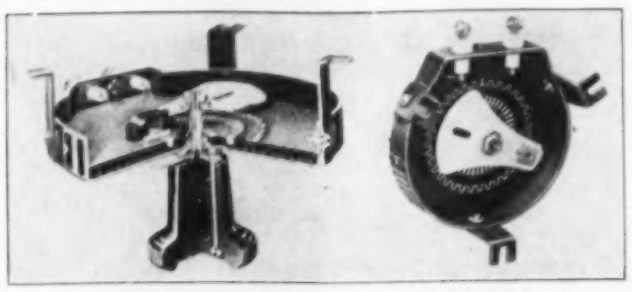
ROCKWOOD

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as **IEN - 3803**

RHEOSTAT . . Sealed resistance, 6 to 13 in. diameter, 41 to 161 steps

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.



Illustrated technical data in Bulletin 60A

Vitrom enamel permanently seals the resistance element, the stationary contacts and the reflexed collector ring in this new Bulletin 60A rheostat. The reflexed ring presents a self-cleaning contact surface. A balanced contact arm is keyed to the drive shaft to carry a self-lubricating bushing and graphitized movable contact shoe. The stationary contacts are solid and rectangular in shape. They are made of brass and are permanently secured to the resistance element. Maximum summation ratings are 330, 450 and 1,000 watts in the three sizes. Type S, illustrated, and Type M, a multi-step design, are made in a range of resistance values and current tapers to suit an application.

If you write maker identify as **IEN - 3804**

WELDING . . Tungsten arc electrode particularly for inert gas torches

Source: SYLVANIA ELECTRIC PRODUCTS INC.
1740 Broadway, 16th Floor, New York 19, N. Y.

No contamination

Zirtung trade names a new alloy of tungsten and zirconium to produce an electrode for inert gas welding torches. Tests show consumption limited to an inch of the electrode length on a 12,000-in. welding job using semi-automatic equipment on two sheets of 0.035-in. stainless steel.

Contaminant pickup is negligible. The non-wavering arc is excellent for all metals, particularly mild steel, aluminum, magnesium. The alloy does not contain radio active materials.

Identify as **IEN - 3805**

Little instrument, available from Robotron Corporation, enables you to check your thyratron control tubes for filament continuity, cathode emission, control-grid and shield-control characteristics, excessive internal arc drop, internal short. The tube to be tested mounts in a socket on the instrument housing. The instrument plugs into a shop line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3806**

If you have a labeling problem ordinary labels can't solve...use AVERY Kum-Kleen self-adhesive LABELS

...the tough ones are our specialty

...where other types of labels are found "wanting"...or when you need to substitute an attractive pressure-sensitive label for a costly nameplate... Avery Kum-Kleen labels are the *best* solution to your problem!

...and so are the other kind..

...where you want *faster* labeling... improved appearance...labels that won't pop, curl or peel...or those the housewife can remove without soaking or scraping...there's no substitute for an Avery Kum-Kleen label!

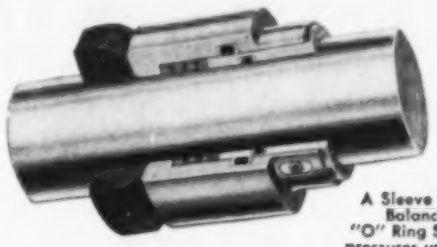
faster • easier • more economical

Patented Avery dispensers...manual or electric... feed die-cut *pressure-sensitive* labels off roller tape, ready to be LAID ON any clean, smooth surface. No moistening...no sticky fingers.
Where can YOU use these labels in YOUR business? Write today for free samples, case histories and prices.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 So. California Ave., Monrovia, Cal. • Offices in Other Principal Cities
Originators of Pressure-Sensitive Labels

If you write maker identify as **IEN - 3807**

Garlock "O" Ring Seals
FOR ROTATING PUMP SHAFTS



A Sleeve Drive Balanced "O" Ring Seal for pressures up to and over 1,000 p.s.i.

Simple in Design, Leakless in Operation

Garlock "O" Ring Seals will withstand any liquid, whether mild, harmfully corrosive or extremely hazardous, on rotating pump shafts. These superior mechanical seals are made with a minimum of parts. "O" Rings are available in "Teflon," Buna-N, Neoprene or Silicone; the metal parts contacting the liquid are available in any suitable metal. Write today for Mechanical Seal Booklet.

Branches in Most Principal Cities

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK ®

If you write maker identify as **IEN - 3808**

Approved by New York City Bureau of Standards and Appeals No. 932-49-SA.

Millions of dollars in water damage to stock and equipment is caused annually by sprinkler systems which continue to release floods of water after the fire is out! Even in the absence of fire, an unexpected mechanical failure can cause a sprinkler head to operate, causing tremendous, unnecessary water damage.

Now you can protect your plant with "Sprinkler-Stopper", a valuable device which, when inserted into the ring of a sprinkler head, instantly stops the flow of water, but leaves the rest of the sprinkler system operative. As the sprinkler control valve need not be turned off, the plant is still protected against fire until all danger is passed.

Already in use in hundreds of plants, warehouses and public buildings, a "Sprinkler-Stopper" placed beside each fire extinguisher is a vital piece of equipment. "Sprinkler-Stopper" will prove of tremendous value in the event of fire, or if a mechanical failure should cause a sprinkler head to operate prematurely.

"Sprinkler-Stopper" is manufactured in two styles, Model A and Model B, which will accommodate virtually all of the sprinkler heads in current use. Be sure to specify the type heads in your plant when requesting information.

Write for free catalog to Department N2

SPRINKLER-STOPPER SALES COMPANY
15 W. Palisade Avenue • Englewood, N. J.

If you write maker identify as IEN - 3810

AMES

No. 2 Dial Comparator

This is smallest in the Ames' line of high quality dial comparators. It is ideal for desk or bench use in the fine inspection of small precision parts. Light in weight, its broad base makes it very stable. The capacity approximates that of the regularly supplied Ames No. 202 Dial Indicator which has a 0-100 dial, graduated in .001", with a .250" range. If your job requirements differ, you can have the No. 2 with any Ames "Hundred Series" Dial Indicator. Send for details.

Send today for your free copy of Catalog No. 58

Representatives in principal cities. **B. C. AMES CO.** *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 3811

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 3813

LAYOUT . . Granite surface plate mounted on new caster equipped stand

Source: ELKRO CO.
734-38 Albany St., Dayton 8, Ohio

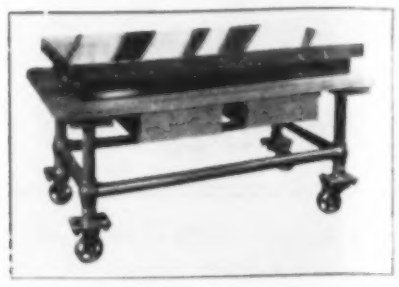


Plate will not warp

The company announces addition of a new four-wheel stand with a finished wood top to provide sturdy portable support for its line of granite surface plates. The plate can be moved easily and safely, on the stand, between several points of use in a shop. The smooth hardwood stand top offers protection for valuable layout tools and instruments.

The plate can be supplied in a range of sizes from 8 by 12 in. to 6 by 10 feet. List price of a 24 by 36-in. master plate, with 10-year guaranteed surface accuracy within 0.00005 in., is $370. The plate alone lists at $300.

If you write maker identify as IEN - 3814

WELDING . . AC. arc electrode for flexible use in all positions

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

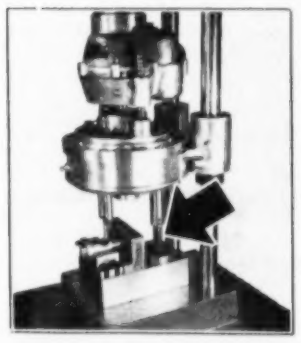
Mild steel general purpose

Type W-610-A is a new electrode for operation on dc. reverse polarity. The electrode will take high currents and provides action that is free from reaction pitting, spatter, blistering. It is suitable for use in all positions in butt, fillet, lap joint and edge welding. Typical applications include use on pipe lines, structural frames, pressure vessels and tanks.

If you write maker identify as IEN - 3815

THREADING . . Multiple tap head is controlled by geared lead screw

Source: ETTCO TOOL CO.
571 Johnson Ave., Brooklyn 37, N. Y.



To specification

Two or more small holes can be threaded accurately under lead screw control with the company's new multiple spindle tapping head. The assembly, as shown in the illustration, consists of a reversing head, the multiple spindle fixture and the tapping and lead screw spindles. The lead screw runs slower than the taps and is fitted with a screw having a greater pitch than the tap threads to correspond with the speed difference. It rides in a nut in the work holding fixture and is completely enclosed when the head is set up for operation.

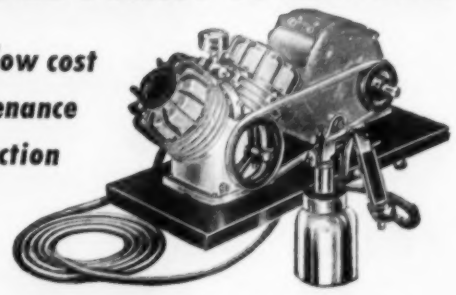
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3816

Speedy Sprayer

PORTABLE PAINT SPRAYERS

for low cost plant maintenance and production



Dozens of handy, money-saving uses for these portable SPEEDY SPRAYERS! Operate anywhere in or out of your plant beyond the reach of air lines. Rugged, powerful, sprays all materials. Or use as source of compressed air, as vacuum pump or to inflate tires, etc. Absolutely clean, oil-free air assured by proved diaphragm principle employing no oily pistons. Order SPEEDY SPRAYER from your mill supply house or write direct for free catalog.

MODEL 444—½ H.P.
Heavy duty master twin. Delivers 4 cu. ft. air per minute at 40 lbs. Operates with ½ H.P. motor or gas engine. Complete with gun, 15 ft. air hose, less motor, $59.50

MODEL 890—¼ H.P.
2 cu. ft. air per minute at 30-40 lbs. pressure, less motor, $32.50

No. 778 Utility Paint Container for above models, holds 3 gals. paint $19.95

W. R. BROWN CORP.
2671 Normandy Ave., Chicago 35, Ill.

Specialists in Portable Sprayers for over 20 years

If you write maker identify as IEN - 3817

MACHINE DESIGNERS!

GET THE FULL STORY ON HANNIFIN'S

NEW *Pilot-Master* Air Control Valves!

HERE'S WHY MAINTENANCE MEN PREFER THEM...

FEWER VALVES TO STOCK
Use same valve 2-way or 3-way, normally open or normally closed.

FEWER PARTS TO STOCK
Unique cartridge construction makes "insides" easily replaceable.

INDUSTRIAL SOLENOIDS
Long-lasting, easy to change coils to any standard voltage.

¼", ⅜", ½", ¾", 1", 1¼" Sizes; Pressures to 150 p.s.i.
Write for Bulletin 231 and get the complete story!

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.

Air and Hydraulic Cylinders • Presses • Air Control Valves

If you write maker identify as IEN - 3818

IDEAL "Hand Type" CLEANERS

Cut Cleaning Time and Costs!

3 MODELS ...for EVERY CLEANING JOB

2/3 H.P.
1-1/3 H.P.
1/2 H.P.

For easier, faster maintenance or production cleaning jobs — on machinery, stock bins, scrap pick up — there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly — to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value — get IDEAL!

TRY ONE FREE!

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner for our plant.
NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

If you write maker identify as IEN - 3819

Two Way Protection

Slip a Twin Disc HYDRO-SHEAVE® Drive on the end of motor or engine shaft, and you've gained *two*-way protection . . . a "cushion" of oil that *protects:* (1) motors and engines from damaging overloads; (2) driven equipment from shocks and vibrations. Call your Twin Disc Hydraulic Dealer today—find out how other industries in your area are getting two-way protection against overload repairs and lost man-hours with HYDRO-SHEAVE Drives. And write for Bulletin 145-B.

HYDRO-SHEAVE Drive —the Twin Disc Hydraulic Coupling unit designed for easy installation on motors or engines from ¾ to 50 hp.

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as **IEN - 3820**

NEW SBS WATERLESS WASHSTATION*

"brings the washroom to the worker"* for only $52.50 per unit

(F.O.B. Saginaw, Michigan, towel dispensers not included)

Portable Wash-up units that save hundreds of man-hours . . . thousands of dollars!

The SBS Waterless Washstation is a complete hand-washing unit that requires no plumbing because it uses SBS-30 Waterless Skin Cleanser.

- **locates** close to work areas in factories, warehouses, or outdoors.
- **saves** up to $720 per unit annually by reducing time workers spend off the job washing up.
- **reduces** crowding in washrooms at lunch time and new shift time.
- **eliminates** use of harmful and irritating solvents.

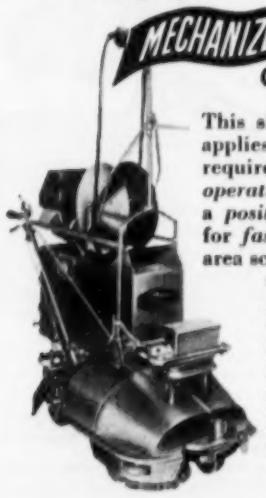
SBS Waterless Washstation is heavy steel finished in grey-green enamel. Turret top has storage space, holds SBS-30 dispenser and two of your own paper towel containers. Removable cloth bag for used towels in base. Easy to fill dispenser has two-way feed adjustment that provides 1000 to 1500 washes before refilling. One turn of handle dispenses right amount of cleanser—no leakage, no waste. SBS-30 cleanser is just rubbed on, then wiped off along with all dirt and grease. Leaves hands clean, smooth and soothed. WRITE for complete information about SBS Waterless Washstations and our 30-day no-risk money back trial offer.

*Trademark 87

SUGAR BEET PRODUCTS CO., Saginaw, Mich.
Chemical By-Products Division, Dept. 3E

If you write maker identify as **IEN - 3821**

MECHANIZE *your floor-cleaning with a* **COMBINATION SCRUBBER-VAC!**



This single unit, *Model 213P* at left, applies the cleanser, scrubs, rinses if required, and picks up—*all in one operation!* It's *self-propelled*, and has a *positive* clutch. No switches to set for *fast* or *slow*. The *213P*, for large-area scrubbing, has a 26" brush spread. Cleans up to 8,750 sq. ft. per hour! *Finnell* makes sizes for small, vast, and intermediate operations... available on either lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2604 East St., Elkhart, Ind.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — 50th Anniversary — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 3822**

The Answer to **YOUR HONING PROBLEMS**

Here's why they're switching to the

SUPERIOR HONING MACHINE

Model "J"

There IS a difference in honing machines. Superior gives you all the features you want. It's the most versatile and economical bench-type honing machine made. For instance, how many spindle speeds would you like? The Superior gives you infinitely variable speeds from 400 to 1000 r.p.m. AND without changing belts. Talk about ease and speed of changing mandrels and stones—no tools are needed! All stones are ground to size.

With the Superior you can hone over keyways, spline gears and most broken surfaces. How big is it? 13" x 16½" x 25" high. It weighs only 125 pounds.

Use a Superior honing machine. You'll be quick to see its many advantages and you will be satisfied with no other; for after all arguments are exhausted, performance is the test.

Use coupon today to get free literature

SUPERIOR HONE CORPORATION
1611 ELRENO STREET ELKHART, INDIANA

Please send free catalog on Superior Honing Machines

Name .....
Firm .....
Street .....
City and State .....
Name of Supplier .....

USEFUL NEWS NOTES INFORMATION

If you write maker identify as **IEN - 3823**

PIPE FLANGE BOLTS
ASME bulletin reviews specifications and selection

Taylor Forge & Pipe Works
P. O. Box 485-A, Chicago 90, Ill.

Technical paper originally presented at an ASME Division conference has been reprinted by the company and is offered on request as 24-page Bulletin 524. Title is "Modern Steel Bolting for Piping and Pressure Vessels." It describes current specifications and grades, dimensional requirements, code stresses, selection, assembly practice.

If you write maker identify as **IEN - 3824**

CERAMIC PARTS
Instructions on how to make your own experimentally

American Lava Corp.
253 Cherokee Blvd., Chattanooga 5, Tenn.

Company's Lava ceramic is a mined stone which in its unfired state can be machined like brass or wood. After machining it is heated to 1,850 to 2,000 deg. F. This converts the relatively soft stone into a very hard material. Bulletin 525, 4 pages, describes available grades for model making, gives instructions on machining and firing.

If you write maker identify as **IEN - 3825**

SURFACE CONDENSERS
Booklet of standards on performance, materials, sizes

Heat Exchange Institute
122 E. 42nd St., New York 17, N. Y.

New information on heat-transfer rates is contained in revised edition of the Institute's "Standard for Steam Surface Condensers," a 20-page booklet that lists at $2. The booklet defines terms, sets up standards of performance, materials, construction, recommended sizes, vacuum pump capacities.

If you write maker identify as **IEN - 3826**

ELECTRIC CONNECTOR MANUAL
Shows assembly procedures for coaxial and other cables

American Phenolic Corp.
1828-32 S. 54th Ave., Chicago 50, Ill.

Step-by-step pictures are keyed to descriptive text in new 40-page edition of the company's "OK Methods" assembly instruction book. It shows how to wire AN and special connectors, general methods and procedures for RF. connectors on coaxial cable. It also shows how to apply safety wiring and methods of multiple wire coding. Ask for Manual C-3.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3827**

hitch your HEAT to a

WISSCO STEEL PROCESSING BELT

Turn your products out faster, more economically in continuous straight-line production with a Wissco Belt. To order, write or call our nearest sales office.

THE COLORADO FUEL AND IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New York • Philadelphia

1430

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as **IEN - 3828**

MACHINE LOADING, SCHEDULING DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for these cost-cutting results now available:

Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to Plan Assured.

Readily Adaptable . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc., and McCaskey Machine Control Boards.

Write today for your copy of illustrated Bulletin A-630 IEN containing all the facts

The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as **IEN - 3829**

Machine de-burring with NOBUR *pays BIG production dividends!*

NOBUR Tools *turn a slow bench operation into fast and efficient machine work!* Remove burrs on multi-walled parts with a smooth, clean cutting action that won't mar highly finished surfaces. Eliminate rejects from slow, costly hand work with files, scrapers and abrasives.

Nobur Tools are used on any lathe, drill press, portable drill or flexible shaft. Operation of the double-edge cutting blade is easy and safe . . . no skilled help is required, and the spindle never needs to be stopped for either de-burring or chamfering.

Nobur Tools cut freely on either hard or soft metals, are simple in construction and are made in sizes to cover a full range of hole diameters. ***NEW "DS" SERIES extends range of NOBUR applications to holes as small as ⅛" diameter. WRITE FOR FULL DETAILS TODAY!**

Parts like these quickly de-burred with

NO BUR TOOLS — **NOBUR MANUFACTURING COMPANY**
717 N. VICTORY BLVD., BURBANK, CALIF.

If you write maker identify as **IEN - 3830**

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry!

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$29.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 3831

IF THE AIR IN YOUR PLANT IS all fouled up...

No problem too tough-whether your air is London Fog thick or Sahara Dry-gaseous or dusty- smoky or hot . . . MUCKLE VENTS remove it quickly and efficiently. These streamlined, propellerdriven,roofmounted ventilators are designed with motor out of the air stream to effectively pull out either wet or dry air. MUCKLE VENTS are a completely weatherproof packaged unit ready to be installed with a minimum of expense and work, available in wide range of 15 sizes from 254 CFM to 10280 CFM.

LET MUCKLE VENTS INCREASE EFFICIENCY IN YOUR PLANT!

Muckle WRITE SOME TERRITORIES OPEN FOR SALES REPRESENTATIVES

MANUFACTURING CO., OWATONNA 33, MINN.

If you write maker identify as IEN - 3832

FOR SAFETY Interlock!

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".

Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

Provides a predetermined sequence of operation...and prevents "mental lapse" which might cause damage to men and equipment.

A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.

"B"-TYPE F FLAT MOUNTING

"A"-TYPE D, DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

Write for Bulletin 1300 for many more details.

R&IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PA.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 3834

TEMPERATURE CONTROL MANUAL
Describes principles and ways to use control instruments

Partlow Corp.
4 Campion Road, New Hartford, N. Y.

Eight means of response to temperature, five ways to put such response to work, three basic types of mercury-bulb instruments, nine types of the company's mechanisms, four types of heat sources, six typical circuits are covered in revised 24-page Bulletin 101. The bulletin carries the title, "Design and Process Engineer's Guide to Industrial Temperature Measurement and Control."

If you write maker identify as IEN - 3835

CRANE ATTACHMENTS
Their uses and capacities are given in 64-page book

Power Crane & Shovel Association
72-76 Trinity Place, New York 6, N. Y.

Front-end attachments for power cranes and shovels are grouped into three basic types by new Technical Bulletin 4 which lists at $1. These are shovel boom, crane boom and hoe boom. Material-handling tools for the crane boom are illustrated and their uses described. Instructions are given on setting up the equipment and using it to best advantage.

If you write maker identify as IEN - 3836

DRILL SIZE CHART
Lists 327 drills from .0135 to 1.000 inch diameter

Ace Drill Corp.
2602 Maumee Road, Adrian, Mich.

New wall chart, 11 by 14 inches, consolidates fractional, wire, letter and millimeter drill sizes into one consecutive listing of 327 units by their actual diameter. These diameters are given as four-place decimal fractions alongside the standard size designations. The chart is printed on cardboard.

If you write maker identify as IEN - 3837

FLOOR MAINTENANCE
Instruction booklet on wood, concrete, tile floors

S. C. Johnson & Son Inc.
1523-27 Howe St., Racine, Wis.

Maintenance procedures are given in the form of step-by-step pictures and instructions by revised 20-page edition of the company's "How to Care for Your Floors" booklet. These procedures apply to floors of rubber tile, asphalt tile, wood, cork, linoleum, concrete, terrazzo. One section tells how to cure "sick" floors and another tells how to keep floors safe.

If you write maker identify as IEN - 3838

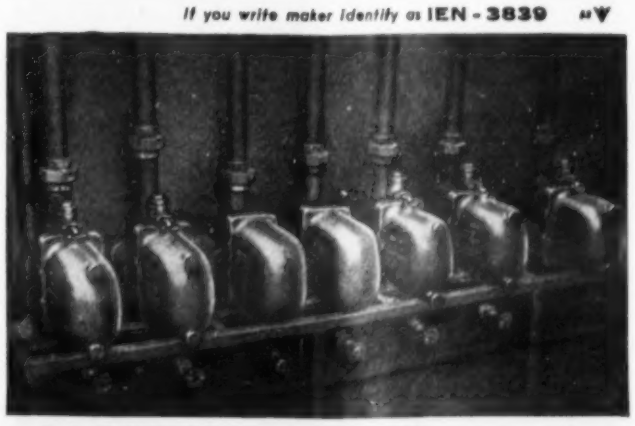
SURFACE FLATNESS GAGES
Pictures tell what optical-flat light band patterns mean

Crane Packing Co.
1815 Cuyler Ave., Chicago 13, Ill.

Measuring surface flatness with light-band readings is described by a set of pictures in new 6-page Bulletin L-404 on the company's Lapmaster optical flats and monochromatic light source. Another set of pictures shows how to interpret light-band readings. Instructions are given on care and use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3839



34,000 Pounds of Condensate

. . . must be removed every hour day and night from the steam coils in air driers processing salt at Manistee Salt Works, Manistee, Mich.

These Sarco float-thermostatic steam traps have been doing the job since 1948 without a break, at a steam pressure of 150 psi.

They can't air-bind because each trap is equipped with a standard Sarco thermostatic air vent. These vents operate on the balanced pressure principle and are unaffected by changing or fluctuating steam pressures.

Where very large volumes of condensate must be removed instantly, this trap has no equal. For additional information, write for Bulletin 450-10 to *Sarco Company, Inc., Empire State Bldg., New York 1, N. Y.* *Advt. 604*

If you write maker identify as IEN - 3840

A major advance in fork truck design. Mercury "Yak" 430 incorporates...higher maximum fork elevation • increased free lift • greater speed • lighter chassis weight • shorter turning radius • simple *low pressure* hydraulic hoist system • new unit drive with quick detachable motor and self-energizing hydraulic brakes • new compensating castor type steering axle • Timken duo-grip parking brake actuated by driver's seat.

MERCURY MANUFACTURING CO.
4132 S. Halsted Street, Chicago 9, Illinois

If you write maker identify as IEN - 3841

If you write maker identify as IEN - 3842

Here's why it pays to use LINK-BELT "RC" Flexible Couplings

Equalized load / Proper balance at high speeds / Effective compensation for end float and misalignment

Yes, two big engineering features—single chain simplicity and divided rollers—combine to assure top performance, economical power transmission. And that's why you get the three big operating advantages listed above with Link-Belt RC Flexible Couplings. Find out how you can use these efficient couplings to provide positive flexible shaft connection . . . from fractional to 1000 hp. Ask your nearest Link-Belt office or distributor, or write for Folder 2363.

LINK-BELT
"RC" FLEXIBLE COUPLINGS

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 3843

GOULDS Fig. 3642 close-coupled centrifugal pump. Capacities to 110 GPM. Heads to 120 ft.

NEW GOULDS PUMP

saves space, slashes installation, operating and maintenance costs

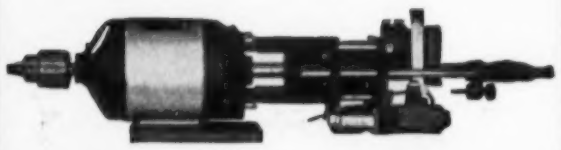
- COMPACT DESIGN — Fits in tight spaces. No coupling needed.
- EASY INSTALLATION — Bolt pump down. Connect power—and operate. 8-position casing.
- MINIMUM MAINTENANCE — Remove motor, adapter and rotating element without disturbing piping connections.
- QUIET OPERATION — Impeller, only moving part, carefully balanced for noiseless performance.
- NO STUFFING BOX LEAKAGE — Mechanical seal prevents leakage, requires no maintenance.
- LONG TROUBLE-FREE SERVICE — Sturdy construction assures long operating life.

For performance curves, prices, etc., contact your Goulds representative or write for bulletin 624-A3.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as IEN - 3844

New BLACK SELF-CONTAINED DRILLING UNITS



NO SPLINES — Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

NO GEARS — New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled so tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

NO CAMS

NO CLUTCHES

NO REVOLVING WEIGHTS — Operate in any position. Wide range of speeds and sizes.

Write for complete information

BLACK DRILL COMPANY, Inc.
1378 EAST 222nd STREET CLEVELAND 17, OHIO

If you write maker identify as IEN - 3845

Couch Phones Pay Dividends

If you are fed up with busy signals, excessive switchboard traffic, high phone bills, and time-wasting non-business calls . . . Couch Phones offer a solution. Expensive? No . . . not when you consider that you are now paying for them many times over through these same high phone bills and lost time due to busy signals and personal calls.

Couch Autophones combine privacy with the convenience of individual dial operation; and their original cost is the last cost. Investigate the advantages of Couch Inter-com Phone Systems. Write today for Bulletin 5282.

H. Couch Company, Inc.
NORTH QUINCY 71, MASSACHUSETTS

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 3846

EMPLOYEE IDENTIFICATION
By means of photo badges described in 36-page booklet

Fairchild Camera & Instrument Corp.
253 Robbins Lane, Syosset, L. I.

"Industrial Security" titles new information booklet on types of employee badges and identification cards currently available together with equipment used in making them. The booklet also describes the company's Polaroid-Land equipment with electronic flash to deliver completed prints in 60 seconds with no darkroom required. You may be interested in the 29 questions and answers on badge making.

If you write maker identify as IEN - 3847

MOTOR CONTROL
Wiring diagrams on how to apply starting switches

Allen-Bradley Co.
1312 S. 2nd St., Milwaukee 4, Wis.

Bulletin 709, 24 pages, is intended as a guide to some of the ways that the company's similarly-designated across-the-line motor starters can be applied. The bulletin consists almost entirely of wiring diagrams, each with a schematic. They cover standard wiring of starters on single, two and three-phase circuits and also variations with start-stop stations, jogging, pump operation, thermostat control, sequence control.

If you write maker identify as IEN - 3848

LABORATORY SAFETY
Is the subject of a 6-page technical reprint bulletin

Fisher Scientific Co.
719 Forbes St., Pittsburgh 19, Pa.

Five major hazards to laboratory personnel are detailed in reprint folder, "Safety in Today's Laboratories." They are chemical burns, electric shock, fire, glass and toxicity. One of the points brought out on the subject of toxicity is that hydrogen sulfide is close to hydrogen cyanide in its toxic effect.

If you write maker identify as IEN - 3849

PORTABLE POWER SAWS
Manual tells what blade to use for wood, metal, stone

Skil Corp.
5039 Elston Ave., Chicago 30, Ill.

"Saw Problem Solver" is new 24-page manual of recommendations on cutting some 30 materials with a portable power saw. The information covers blade selection, cutting method, operating hints on wood, plywood, Masonite, metals, stone, composition materials, tile, asbestos-cement board, plastics.

If you write maker identify as IEN - 3850

STAMPING DISPLAY BOARD
Supplied without charge to show types of stampings

Dayton Rogers Mfg. Co.
2822-26 13th Ave. S., Minneapolis 7, Minn.

New quantity of stamping display boards now is available for free distribution to engineering colleges, trade schools, engineering departments. Each is a framed 24 by 36-in. board on which are mounted 24 different types of stampings. Each stamping is keyed to an index that gives specifications and uses. Steel, other metals, plastic are included.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3851

Lightweight Easy-to-use Strap Cutter

This lightweight cutter cuts steel strapping swiftly and easily with just the pressure of your hand.

Weighing just one pound and only 9½ inches long—Acme Steel's E14AO Strap Cutter cuts steel strapping up to ¾ inch. Built-in band guide keeps strap from turning on edge or wedging between blades. Write Acme Steel Products Division, Dept. IEN-43, 2840 Archer Avenue, Chicago 8, Illinois.

Strap It . . . Stitch It . . . Ship It . . . Safely

ACME STEEL

If you write maker identify as IEN - 3852

A-1035

EASTON

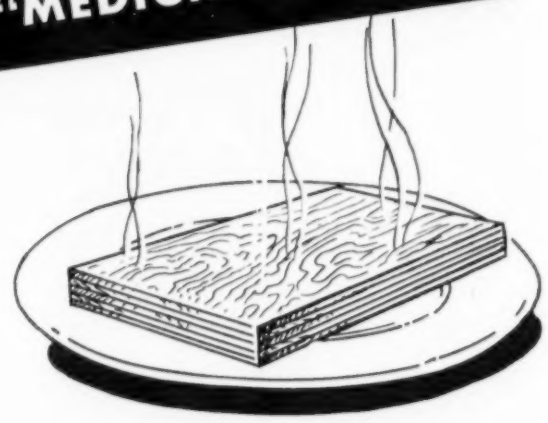
Furnace Cars

EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN - 3853

Want Your PLYWOOD "MEDIUM RARE"?



We know it looks silly to compare a piece of plywood with a juicy steak, but we did it just to illustrate another AETNAPLY service.

You can order your plywood "Just the way you want it" when you order from AETNA. As a steak is ordered to suit your *taste*— Plywood is ordered to suit your *job*.

No matter what your production requirements are, check with AETNA. Do you want it cut-to-size; machined; dip-treated; sprayed? We'll furnish it that way. Do you require odd-shaped or odd-size stock? We'll furnish it as you want it when you want it.

Send your blueprints, specification sheets, or just the general idea. We'll work it out for you and send you a quote or the order—just the way you want it.

AETNAPLY PLUS VALUES

Over 50 species of Plywoods and Veneers Foreign and Domestic.

Free Engineering Service to help you use plywood to your best advantage.

24-hour Shipping Service.

Direct mill shipments to your exact specifications.

Other woodworking products: Glues, Sealers, etc.

WRITE AETNA for the RIGHT PLYWOOD

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Ave. • Chicago 22, Illinois
ARmitage 6-7100

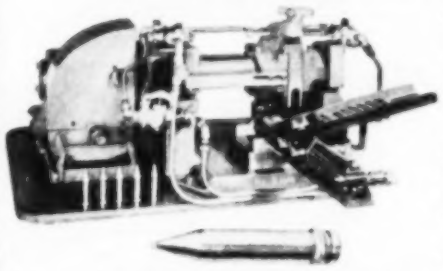
BRANCH WAREHOUSES: Grand Rapids 7, Mich.; Indianapolis 2, Ind.; Rockford, Ill.

PLYWOOD for every purpose — every industry

If you write maker identify as IEN - 3855

AUTOMATIC MARKING

with—
- Motor drive
- Gravity feed
- Air inject and discharge



This newly improved Model No. 9 A M A MARKING MACHINE makes the marking of round parts a wholly automatic operation.

Just as fast as the shells, cartridges, fuses, rods, drills, pins, sleeves, bushings—tubular or solid cylindrical parts, of any metal, can roll down the gravity chute—this ACROMARK MACHINE marks and ejects them. High production—long service. Write for details.

ACROMARK

THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 3856

NEW!

7 WAYS BETTER
1. Simple
2. Accurate
3. Adjustable
4. No diaphragm, no oiling
5. Rust & weather-proof
6. More Economical
7. Guaranteed

PRECISION LONG-LIFE Pressure Switch
for water, air and hydraulic pressures that

GUARANTEES Trouble-Free Operation

At last—a new, yet proven, pressure switch that completely outmodes old-fashioned switches—brings you new important benefits: No wearable parts, no rubber diaphragm to dry and crack, no oiling necessary. This one all-purpose switch eliminates inventory and storage headaches. High and low pressure limits adjust independently, 100 lb. range. Snap-action contact unit has life expectancy of 1,500,000 operations. And Simple guarantees it for 2 years against *operation failure*, not just workmanship and materials. Investigate!

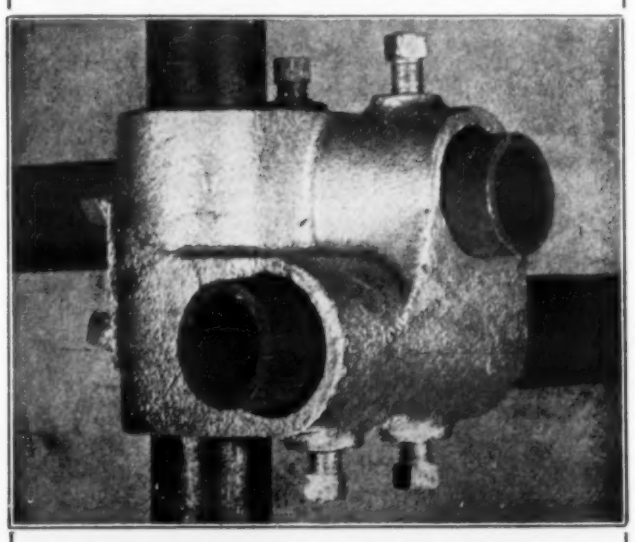
Interchangeable with any other make switch

write for New Bulletin of Specifications

SIMPLE MANUFACTURING CORP. SYRACUSE N.Y.

If you write maker identify as IEN - 3857

MAKE YOUR OWN SCAFFOLDS WITH PIPE



MAINTENANCE AND CONSTRUCTION MEN ARE BUILDING

Safe, durable, adjustable, frame and rolling scaffolds to suit their desire and needs for all of their easy and difficult jobs with:

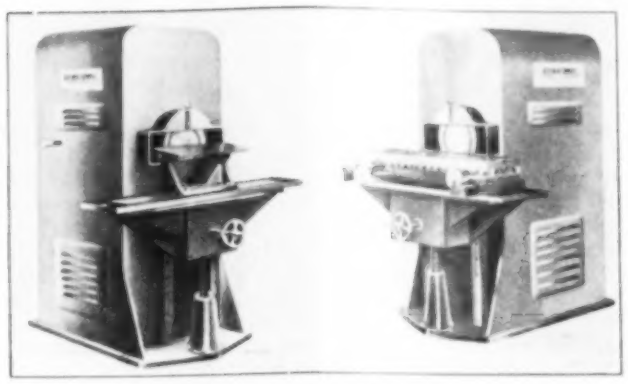
AMIDON FITTINGS
and standard pipe • pictures available

AMIDON ENGINEERING CO., ELYRIA 14, OHIO

If you write maker identify as IEN - 3858

GRINDING . . High speed machine for carbide tipped tools and cutters

Source: DYNATOMIC CORP.
5-9 S. Dearborn St., Suite 912, Chicago 3, Ill.



Illustrated data in Dynatomic Bulletin

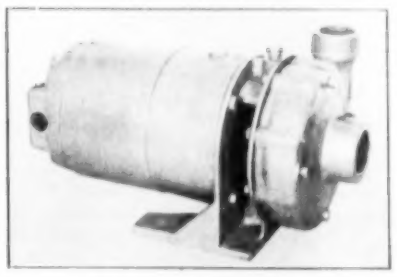
Plastic coated semi-segmental abrasive wheel is mounted in a steel clamp ring on the ball bearing spindle of this new grinder. Special cutting fluid is pumped from a sump in the machine base to pass through the wheel center, keep the face clean and return to the sump. Work is positioned on a tilting table on the plain machine or is secured in suitable fixtures on the table of the universal assembly. The machine has been designed to perform the grinding operation on carbide tools without requiring a diamond wheel.

Drive is by a 10-hp. motor operating at 3,450 rpm. It is ball bearing enclosed design and is belt connected to the spindle. A ¾-hp. 1,750-rpm. motor, also in the housing, drives the spindle at comparatively low speed when the wheel face is to be dressed. The coolant circulating pump is driven by a ¼-hp. motor. The wheel is 10 in. in diameter. The machine occupies a floor space measuring 5 by 4 feet. It stands 6 ft. in height and weighs about 4,000 pounds.

If you write maker identify as IEN - 3859

PUMP . . Motor mounted centrifugal to 110 gpm., 40 ft. head, 3,500 rpm.

Source: GOULDS PUMPS INC.
301 Falls St., Dept. IEN, Seneca Falls, N. Y.



Ask for Bulletin 624A3

Water circulation for air conditioning, booster and condensate services are typical applications for this new Close-Cupld motor mounted pump. It is available in all iron, bronze fitted or all bronze construction with the enclosed impeller mounted on the motor shaft. The assembly includes a shaft seal, vent and prime plugs. A mounting bracket attaches to the motor frame and provides for eight pump housing delivery positions.

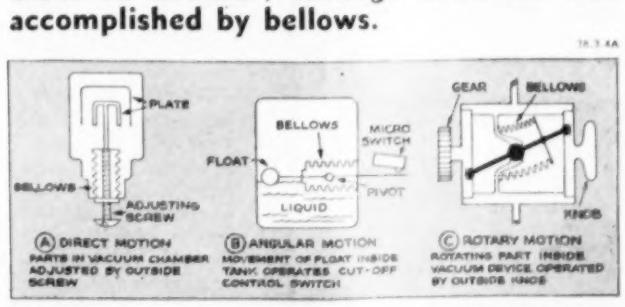
Motor sizes range from ¼ to 1½ hp. when the pump is fitted with 1¼-in. pipe threaded intake and 1-in. outlet. Sizes are ½ to 2 hp. with delivery threaded for 1¼ in. and the intake for 1½-in. pipe. Overall length, including the motor, is about 13⅝ to 15⅝ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3860

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

MOTION TRANSFER . . . from one medium to another, through hermetic seal accomplished by bellows.



Transmitting motion from one medium to another without disturbing seal is accomplished by flexible, leakproof bellows seal

Because Clifford Bellows are inherently leakproof and flexible, they can be employed to permit extension, retraction, rotary motion or combinations of the three motions to be transmitted through a hermetic seal. As shown above the bellows permits the motions required while hermetically sealing each unit's internal elements.

Thus Clifford Bellows equipment was called upon by Jennings Radio Manufacturing Company to move a variable plate in a vacuum capacitor. The Watts Regulator Company uses them to transmit angular motion for a low-water cut-off. The Kearfott Corporation uses Clifford Bellows for hermetic, flexible seals which transmit rotary motion from exterior to interior in high vacuum systems. Clifford is glad to answer your questions or provide "bellows-engineering" help.

Write for bulletin: "What To Consider When Selecting Metallic Bellows."

CLIFFORD MANUFACTURING COMPANY
146 Grove St., Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as IEN - 3861

NEW...LIGHTWEIGHT...NON-CORROSIVE

UDYLITE LAMINEX TANKS

Udylite Laminex tanks of molded fiberglass have many of the advantages of aluminum or stainless steel yet cost less.

In addition to this important low initial cost, Udylite Laminex tanks have these unique features—

- Non-corrosive inside and out. They're easy to clean, too.
- Electrically non-conductive.
- Extremely lightweight. A 2'x2'x3' tank weighs only 60 lbs!
- If accidentally damaged, can be quickly and easily repaired, in place.
- Capacities are from 25 to over 500 gallons, and depths up to six feet are available.

For full information on prices and sizes, call your Udylite Technical Man or write direct.
THE UDYLITE CORPORATION
DETROIT 11, MICHIGAN

THE Udylite CORPORATION

If you write maker identify as IEN - 3862

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 3863

Deliver Exact Pressure!

Hein-Werner
"Push and Pull" Hydraulic Jack with gauge attached

Exert the exact pressure you need without guesswork or hit-and-miss methods. Just use a HEIN-WERNER 10 ton or 20 ton "Push and Pull" Hydraulic Jack equipped with pressure gauge. These powerful jacks have a highly accurate, factory installed gauge calibrated for pressure in tons, with separate readings for push and pull. A red indicating needle shows the highest pressure on either push or pull and remains at that point until set back. A black needle shows the pressure prevailing during a pushing or pulling operation. Get all the facts from your industrial supply distributor or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

If you write maker identify as IEN - 3864

POWERFUL . . . COMPACT . . . BUILT TO LAST . . . LOW IN COST

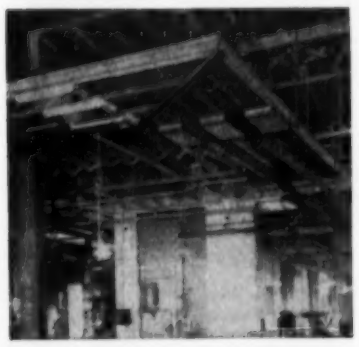
Dremel Moto-Screwdrivers are small, yet rugged . . . precision-built for long, trouble-free service. Because they are so compact, they are ideal for small parts assembly work, especially suitable for female operators. Many users report savings which pay for the tools the very first day in use! Ask your Dealer for details, or write for free data sheet without obligation.

LIGHT WEIGHT, COMPACTNESS, FAST OPERATION make Moto-Screwdrivers the ideal tool for small screw users. They occupy little bench space, are held at comfortable right-angle to work, and drive free-running screws and nuts more than 5 times faster than by hand. Take advantage of these savings now!

DREMEL MANUFACTURING CO., 2442 Eighteenth St., Racine, Wisconsin

If you write maker identify as IEN - 3865

Major CHANGES MADE Minor WITH Trumbull Flex-A-Power® Busways



Plant expansion, or rearrangement of production machines, becomes a simple matter when a Flex-A-Power electrical distribution system is installed. Machines plug in almost as easily as your toaster. New sections can be added quickly and inexpensively. An entire system can be dismantled and reinstalled with almost 100 per cent re-use of material.

Available in these types:

* **Type LVD Feeder Busway,** 600-4000 amps, 2-, 3- and 4-pole, to 600 v.
* **Type FVK Plug-In Busway,** 225-1000 amps, 2- and 3-pole and 3 phase 4 wire, to 600 v.

Type LTG Plug-In and Trolley Busway, 50 amps, 2-, 3- and 4-pole, 300 v., AC or DC.

Type TK Heavy Duty Trolley Busway, 100, 200 and 400 amps, 2- and 3-pole, to 600 v.

* *With copper or aluminum busbars.*

TRUMBULL ELECTRIC
DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONN.

If you write maker identify as IEN - 3866

You need this Carey Reference Manual

for Asphalt Asbestos • Magnesia Products

Send today for your FREE copy of this new Carey Reference List. It's designed to save you time in matching products to specifications—and vice versa. No industrial executive, designer, engineer or architect should be without it. Just fill in coupon and mail today for your FREE copy. No obligation!

THE PHILIP CAREY MFG. CO.
CINCINNATI 15, OHIO.

Carey

The Philip Carey Mfg. Co.,
Cincinnati 15, Ohio, Dept. IE-4

Gentlemen: I want a FREE copy of the Carey Reference List for Asphalt, Asbestos and Magnesia Products.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

USEFUL INFORMATION
(Concluded)

If you write maker identify as IEN - 3867

STAINLESS STEEL
Information booklets cover its uses in nine industries

Crucible Steel Co.
1175 Chrysler Bldg., New York 17, N. Y.

Specific information on how stainless steel is used in each of nine industries is presented in new series of booklets, one per industry, with more to come. Each booklet gives reasons for using stainless steel in its industry, tells in what equipment stainless is used and can be used, all in specific industry terms. Each illustrates design features for economy.

The nine booklets carry the name of the industry as part of their titles. Each starts with "Making the Most of Stainless Steels," followed by the industry. These include textile, brewing, pulp and paper, meat, chemical process, dairy, food processing, soft drink, laundry. Please state your interest.

If you write maker identify as IEN - 3868

STEEL SPECIFICATION CHART
Lists 60 Government analyses on carbon steels

Peter A. Frasse & Co.
15 Grand St., New York 13, N. Y.

Carbon steels are grouped on new 9½ by 11¾-in. file card chart by U. S. Military specifications, by Navy, by Army, by Army-Navy Aeronautical, and by Federal Specifications. Each specification is followed by analyses, available forms, nearest corresponding SAE, AISI, AMS designations.

If you write maker identify as IEN - 3869

THERMISTOR DATA BOOK
Gives types, properties and a set of suggested uses

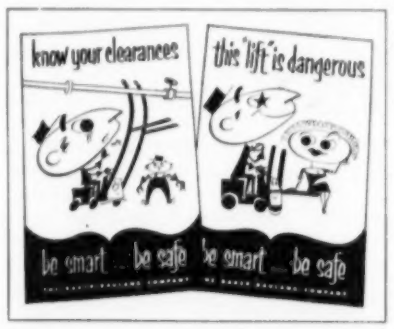
Victory Engineering Corp.
20 Springfield Road, Union, N. J.

What a thermistor is, three forms of construction, properties, comprises first section of new 36-page "Veco Data Book" which the company will send on request to qualified individuals. List price otherwise is $1. Schematic diagrams illustrate typical uses in a second section.

If you write maker identify as IEN - 3870

POWER LIFT TRUCKS
Color posters to remind operator of proper practice

Baker-Raulang Co.
1228-32 W. 80th St., Cleveland 2, Ohio



Cartoon style with a minimum of text is employed for new set of eight safety posters which the company will send you on letterhead request. Each poster is printed in color on a 14 by 22-in. sheet. Typical messages are "Know Your Clearances," "Watch Load Limits," "Always Brake Carefully." Each carries the reminder: "Be Smart—Be Safe."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 3871

A PAID NEWS ADVERTISEMENT BY JAY-CON ASSOCIATES

VACUUM SWITCH . . New Industrial Type Introduced by Jay-Con

Low Cost, Simple To Operate

An automatic vacuum switch that prevents "dry operation" of electric or gasoline powered pumps, drills, and other equipment operating on limited liquid transfer or vacuum applications, has been developed by Jay-Con Associates, Minneapolis, Minnesota.

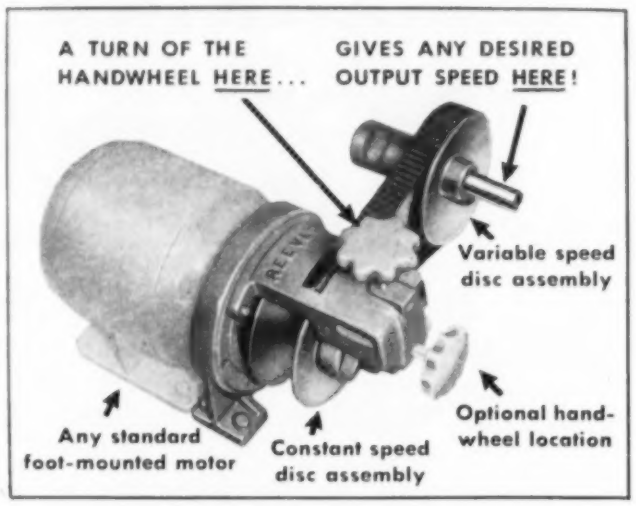
The Vac-On Vacuum Switch appears to be the answer to a long felt industrial need. Operating on a spring loaded, rubber diaphragm principle, the new vacuum switch mounts on the suction line and is wired into power supply or spark system. When suction falls below a predetermined negative pressure, the switch automatically cuts off the power source. Silver contact points are utilized for heavy duty service and a small hand lever allows manual re-start.

The Vac-On Vacuum Switch, Model 35-2, will operate electric motors up to 2 H.P. on AC or ½ H.P. on DC current. Model 35-5 is effective on any gasoline-powered engine and shorts out the spark plug in event of liquid or vacuum supply failure.

For further information including prices, write **Dept. 201,** Jay-Con Associates, 404 Washington Ave., Minneapolis 1, Minnesota.

If you write maker identify as IEN - 3872

NEW! REEVES Flexi-Speed Drive



Mounts in any position . . . drives in any direction . . . gives any speed within 8:1 range . . . available in ½, ¾ and 1 hp. *Low Price!* Write today for details to Dept. IN91-V 532.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as IEN - 3873

CLING-SURFACE

MAKES BELTS
1. WORK BETTER
2. LAST LONGER
3. SAVE POWER

Stop running your transmission belts *tight!* Belts run under high tension, stretch and constantly require "take-ups" which cause costly down time. They increase the friction load, waste up to 50% of your power and place needless strain on bearings and shafting.

By merely applying Cling-Surface to your belts, you greatly increase their "grip" and by relaxing the tension, you actually *increase* the surface areas the belts "cling" to. This "slack belt" operation practically eliminates belt repairs, makes belts, bearings and shafting last longer and delivers MORE POWER to your machines.

The ONLY belt preservative in existence that has passed U. S. Government requirements, Cling-Surface is also the ONLY brand that DARES to recommend this economical, trouble-free, "slack belt" way to end belt worries. A trial will convince you! Sold on MONEY BACK GUARANTEE since 1896. Ask your mill supply man or,

SEND FOR THIS FREE BOOK ▶
"The Truth about all Belt Dressings"

CLING-SURFACE CO. 1042 NIAGARA STREET BUFFALO 13, NEW YORK
CLING-SURFACE CO. OF CANADA, LIMITED, TORONTO, ONTARIO

If you write maker identify as IEN - 3875

Behind these Cup Goggles WORKERS' EYES ARE SAFE!

AO 301A Duralite Goggle

FOR FLYING PARTICLES as in heavy chipping, grinding, babbitting, riveting and hand tool and machine work. Individually molded eyecups. Wide vision. Ample ventilation. 50 mm. Super Armorplate or 6 Curve Super Armorplate Clear or Calobar Lenses.

FOR RAY PROTECTION For acetylene welding, cutting, brazing and furnace operations where hazards are light rays, glare, flying sparks and scale. Indirect ventilation. 50 mm. Noviweld lenses or Noviweld Didymium. Replaceable cover lenses.

AO 404A Duraweld Goggle

AO 302A Dust Goggle

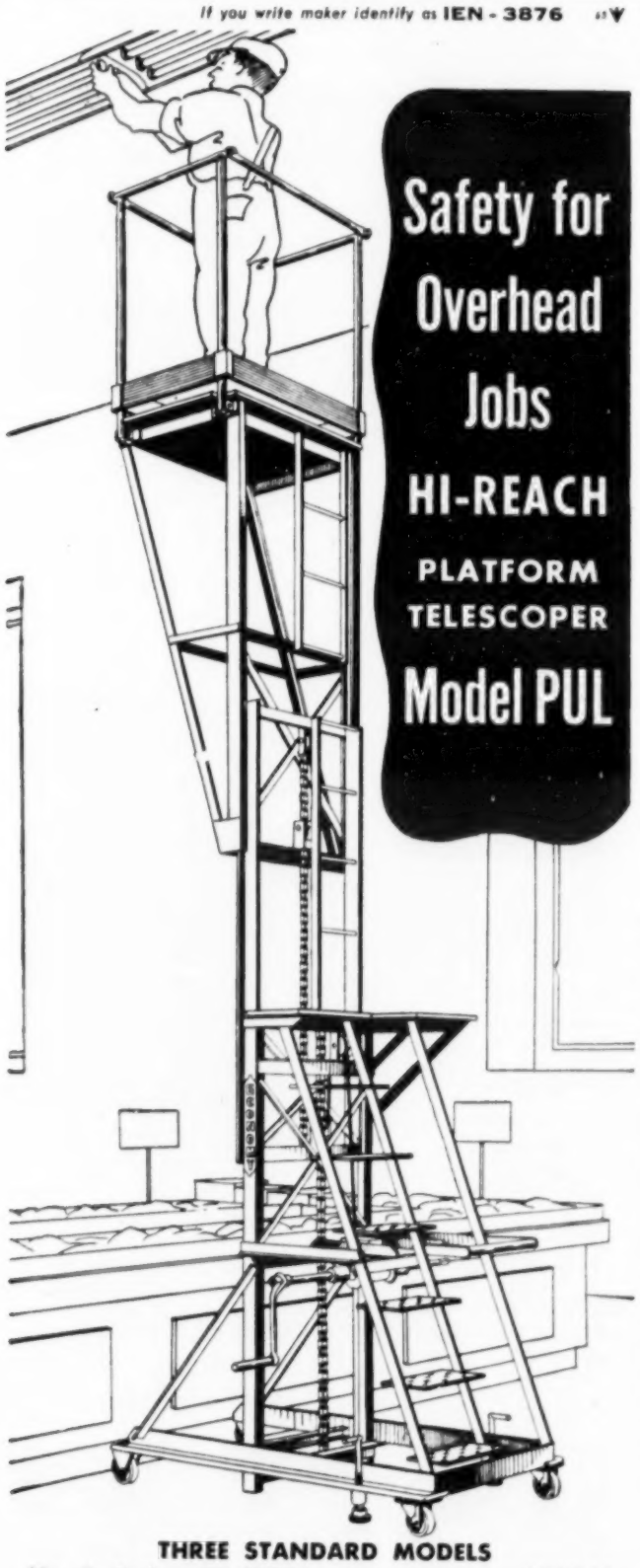
FOR DUST PROTECTION While primarily for protection against fine dust particles as in cement and compressed air operations, also safeguards against flying particles coming from any direction. 100 mesh wire screen.

YOUR NEAREST AO SAFETY PRODUCTS REPRESENTATIVE CAN SUPPLY YOU.

American Optical — SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

If you write maker identify as IEN - 3876



Safety for Overhead Jobs

HI-REACH PLATFORM TELESCOPER Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

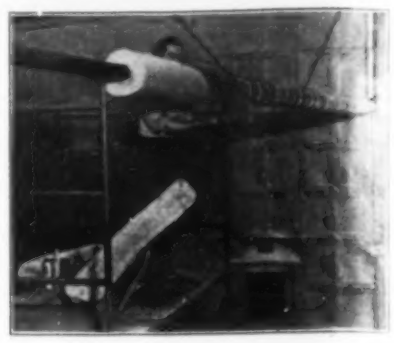
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 3878

INSULATING . . Fiberglas blanket to wrap around hot or cold pipe lines

Source: OWENS-CORNING FIBERGLAS CORP.
100 Nicholas Bldg., Toledo 1, Ohio



Bulletin Aerocor PF-306

Aerowrap is a new insulating blanket supplied in 100-ft. rolls measuring 36 in. in width by ¾ in. in thickness. It is wrapped on a pipe to a desired thickness, then cut and secured by Fiberglas cord, ties or adhesive. It is covered with roofing felt, asbestos paper faced felt, corrugated aluminum sheet or rolled galvanized sheet metal. A vapor barrier is employed over the blanket, when the pipe is operating as a cold line, to prevent condensation on its surface. Temperature range is from sub-zero to 600 deg. F.

If you write maker identify as IEN - 3879

WELDING . . Coated arc electrode, Class E-6010, for reverse polarity

Source: METAL & THERMIT CORP.
100 E. 42nd St., 17th Floor, New York 17, N. Y.

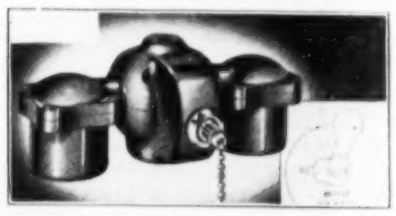
Packaged in 50 lb. cartons

The company announces development of an improved grade of its Murex Type-R arc welding electrode for applications such as power piping, ship construction, general fabrication of tanks and cylinders, general shop and repair work. The electrode is characterized by small amount of spatter, by uniformity of arc behavior, ability to take high current without coating breakdown or change of performance as the metal is consumed. Penetration can be obtained without undercutting or reaction pitting when using the "whip" technique. The electrode is available in 5/32 and 3/16-in. diameters for reverse dc. at 140 and 175 amperes.

If you write maker identify as IEN - 3880

LIGHTING . . Sockets and switch for lamp assembly, plastic housing

Source: McGILL MFG. CO.
100 N. Lafayette St., Valparaiso, Ind.



Guaranteed switch

Number 4200 is a new assembly of two incandescent lamp sockets and a Levolier switch to build into a lamp. The switch controls both sockets. They can be rotated through nearly 360 deg. on the switch housing. Applications include original lamp manufacture, replacement and repair.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3881

Free! FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET — Prepared by Western Precipitation Corporation, *pioneers in the commercial application of* COTTRELL *Precipitators* — summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell construction, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C-103 today!

WESTERN Precipitation CORPORATION
Engineers, designers & manufacturers of equipment for collection of suspended materials from gases & liquids
Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. LA SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 3882

Be fresh Stay fresh

wear a DUPOR No. 40

THE RESPIRATOR THAT IS U. S. B. of M. APPROVED FOR TYPE "A" DUSTS

Guards against pneumoconiosis and silicosis producing dusts. Has over 40 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. "Controlled-breathing" valves. Wearer has a panorama view with no blind spots. Unusual rubber, felt and plastic construction makes it extra durable, no denting or bending possible. Efficiency remains unimpaired even after rough treatment.

Sample sent $3.00 *pp*

H. S. COVER
South Bend, Ind.

If you write maker identify as IEN - 3883

Man alive! This Hydraulic Jack DOES EVERYTHING but walk and talk!

It's *no ordinary* hydraulic jack . . . this is a *"Porto-Power"!* Its compact, *remotely-controlled* ram is threaded for fast assembly with ingenious attachments . . . to push, pull, clamp, press, bend or spread . . . over any span, any angle!

Every maintenance crew needs this

Porto-Power $31 KIT

Replace slow, dangerous, damaging maintenance methods! The 10-ton hydraulic unit and attachments save up to 9 man-hours moving a single machine. Pull pulleys; push out pins, bushings, bearings; bend rail; clamp—do "1001" other tough jobs!

Buy from leading supply houses. Write for "Porto-Power" catalog.

BLACKHAWK
BLACKHAWK MFG. CO., Dept. J-1543, Milwaukee 1, Wis.

If you write maker identify as IEN - 3884

Protects parts FROM RUST AND DAMAGE *while handling or shipping!*

Plastic Seal forms a skin tight coating that is moisture-proof and air-tight. Strongly resists shock and abrasion. Ideal for bulk shipments — requires less wrapping — reduces cost. Although Plastic Seal is tough it can be easily peeled. Transparency allows instant inspection and identification. Also available in colors for coding.

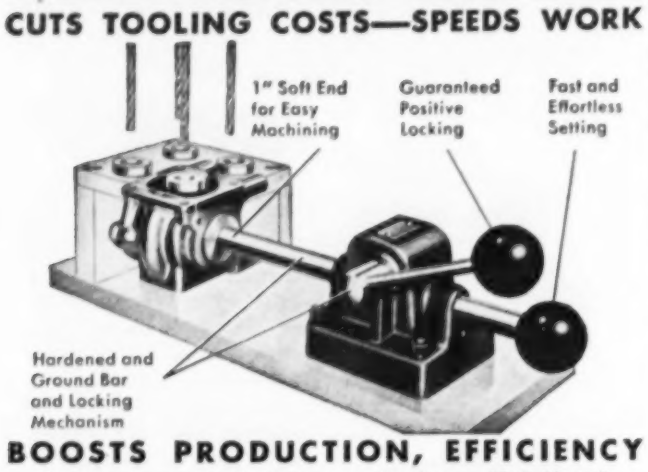
Write today for price information and free engineering service on production dipping problems.

GLOBE *Imperial Corporation*
2023 Kishwaukee St., Rockford, Illinois

If you write maker identify as IEN - 3885

HEINRICH "GRIP-MASTER" FIXTURE LOCK

CUTS TOOLING COSTS—SPEEDS WORK



BOOSTS PRODUCTION, EFFICIENCY

Now—at the request of industry—we offer the new "Grip-Master" Screwless Fixture Lock, applicable for fixtures and jigs used in drilling, milling operations, etc. It incorporates the same high-quality locking mechanism proved by industrial use in the famous "Grip-Master" Screwless Drill Press Vise. Pays for itself quickly by increasing production, cutting tooling costs, etc. See your Dealer, or write for details.

NEW CATALOG FREE

Be sure you have a complete Heinrich Tool Catalog in your files. Your copy will be sent free upon request.

heinrich TOOLS INC.

DEPT. 173-D • RACINE, WIS.

DRILL PRESS VISES • FIXTURE LOCKS • NIBBLERS PUNCHES • ROD CUTTERS

If you write maker identify as IEN - 3886

Performance records prove.....

HOMESTEAD VALVES...are a "Better Buy"

A pottery* in Ohio tried practically every type of valve on its "slip" lines, but the highly abrasive material, at 125 pounds pressure, ruined the average valve in a few months—in some cases, in a few weeks. Our engineers recommended HOMESTEAD Cam-Seald VALVES with special, hard-faced plugs and bodies. The pottery installed them on all "slip" lines in the plant.

Performance records kept during the past several years show that the HOMESTEADS are lasting more than three times longer than any other valve previously used. Savings in replacement and maintenance costs repay many times over the first cost of the HOMESTEADS.

For more than 60 years HOMESTEAD VALVES have been licking equally tough jobs on scores of services in many different types of industries. Chances are there's a valve problem they can solve for you. Why not ask our engineers about it? No obligation.

*Name on request.

Write today for VALVE REFERENCE BOOK No. 39

HOMESTEAD
VALVE MANUFACTURING COMPANY
"Serving Since 1892"
P. O. Box 85 • Coraopolis, Pa.

If you write maker identify as IEN - 3887

SPEEDEX AUTOMATIC WIRE STRIPPER!

NEW!

MODEL NO. 766-i

NET PRICE $4.95 ($8.25 List)

STRIPS BOTH STRANDED AND SOLID WIRE

★ Fully Automatic
★ Single Squeeze
★ Delayed Action
★ Safe - Will Not Crush Fine Stranded Wires

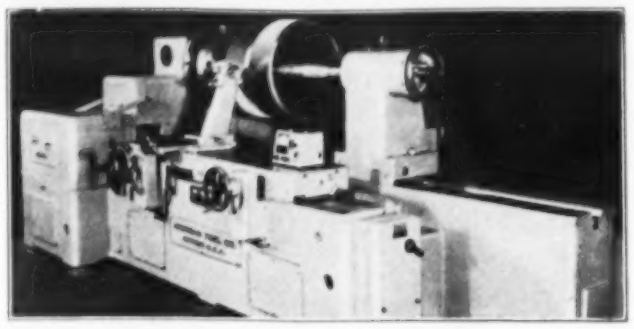
SEE YOUR DISTRIBUTOR OR WRITE FOR LITERATURE AND INFORMATION

WOOD SPECIALTY *Manufacturing Co.*
909 Taylor Avenue, Rockford, Illinois

If you write maker identify as IEN - 3888

GAGE . . Sine bar machine for gears from 18 to 48 inch diameter

Source: MICHIGAN TOOL CO.
7169-73 E. McNichols Road, Detroit 12, Mich.



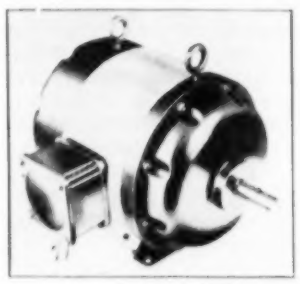
Will also check spur gear parallelism

Lead and axial pitch on gears from 18 to 48 in. in diameter are checked on this new Model 1248 Sine-Line machine. It takes gears to 25 in. in face width on shafts measuring to 96 in. in length. It uses the sine bar principle to check right and left hand lead from 0 to 80 inches. Gears with varying face width and diameter can be checked without changing the sine bar setting, providing the lead is not changed.

If you write maker identify as IEN - 3889

MOTOR . . Corrosion resistant ac. for chemical plants, 1 to 40 hp.

Source: ROBBINS & MYERS, INC.
1343-47 Lagonda Ave., Springfield 99, Ohio



For special duty

Stainless steel outer shell, cast iron end frames protected by iron oxide primer and zinc chromate, cast bronze, aluminum or iron ventilating fans, cast bronze, iron or stainless steel ventilating grilles, corrosion inhibited die cast rotor, all characterize the corrosion resistant construction of this new chemical plant motor.

Ball bearings are factory lubricated and sealed for maintenance free operation estimated at five years or longer. Steel parts are dipped in a corrosion resistant coating and then are baked and painted. Stainless steel shaft can be specified.

The motor is available in ratings from 1 to 40 hp. with standard ac. electrical characteristics. It is built in NEMA frame sizes to No. 405. Totally enclosed or Underwriters' Approved explosion proof construction can be specified.

Identify as IEN - 3890

Four parts of a sudsy solution of Tide, or similar detergent, in water and one part of carbon tetrachloride will make a good cleaning fluid to remove fingerprints, oil, grease, wax, dirt from stainless steel. Armco Research Laboratories recommend it. The detergent acts as a wetting agent, the carbon tetrachloride as a solvent. Use rubber gloves. Wipe the steel surfaces with a cloth saturated in the solution. Rub lightly or let stand for a few minutes. Then rinse in clean water.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3891

POWER DISTRIBUTION IN MODERN PLANTS

INCLUDE Acme Electric DRY TYPE TRANSFORMERS

Departmentalizing the distribution of power, simplifies installation, maintenance and expansion of manufacturing facilities. This is readily accomplished by high voltage feeders to Acme Electric Dry Type Air Cooled transformers which become the distribution point for lower voltage lines. Acme Air Cooled transformers are designed in capacities from 1/10 KVA to 167 KVA, single phase and 9 KVA to 500 KVA, 3 phase. Write for Bulletins 185 and 186.

ACME ELECTRIC CORPORATION
264 WATER STREET CUBA, N. Y.

Acme Electric

If you write maker identify as IEN - 3892

WICKWIRE ROPE SLINGS

in braided and single part construction

Braided slings made by Wickwire give you these advantages:

- Extreme flexibility
- Non-kinking properties
- Better conformation to irregular surfaces
- More even load distribution
- Will not take a permanent set

Write or call our nearest sales office for full details.

THE COLORADO FUEL AND IRON CORP.—Abilene (Tex.) • Denver Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORP.—Los Angeles • Oakland Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION—Boston • Buffalo • Chattanooga Chicago • Detroit • Emlenton (Pa.) • Philadelphia • New York

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 3893

Overhead work's a SNAP! with the NEW Ladscaf SCAFFOLDING

No Bolting with Ladscaf 'LOCK-ON' CLAMPS

It's a snap to erect Ladscaf with these new positive-action clamps. Will not disengage until trigger is released.

UP FASTER

Quickly clamps together to build *better* scaffold *faster*. Ladder rungs are spaced just a foot apart.

SWIVEL ACTION

Stabilizers swivel back to move scaffold easily thru narrow aisles.

UP STAIRS

Ladscaf climbs stairs easily—reduces blocking to a minimum. 2-foot wide panels permit convenient passage around scaffold.

Write for informative, New Ladscaf Bulletin IE-4.

IT'S A SNAP TO SAVE

Call on Universal's layout and planning service to help you

on all Maintenance Painting and Decorating Problems

UNIVERSAL SCAFFOLDING

Ladscaf low-cost, welded steel ladder panels, eliminate bolting—are quickly erected with exclusive snap-on' clamps. Easily fits in confined areas—can be rolled on casters—and extended to straddle machinery.

Combine New Ladscaf with famous Universal Ezebilt steel-panels and Endlok pipe-and-clamp for difficult and unusual scaffolding jobs.

UNIVERSAL MANUFACTURING CORP. ZELIENOPLE, PA.

Distributors offer fast help and service. Consult your classified phone directory

If you write maker identify as IEN - 3895

The *Speedline* system saves money on stainless piping and increases flow and capacity

You can save money on your corrosion-resistant lines...even cut your costs in half. *Speedline* engineers achieve these amazing results by using the new light wall stainless pipe and versatile *Speedline* Fittings.

WRITE FOR THIS FREE BOOK

Just write a note on your company letterhead and we will mail you the *Speedline* catalog. It shows why you get better results at less cost with *Speedline* Fittings.

***Speedline* distributors are located in principal cities from coast to coast**

HORACE T. POTTS CO. *Since 1815*

534 E. Erie Avenue, Philadelphia 34, Pa.

If you write maker identify as IEN - 3896

For Lubricating Devices Call On GITS First!

GITS Bros. covers the *entire range* of lubricating devices: Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges. Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod styles. Threaded or Drive-type. Elbow or Straight.

GITS Bros. offers the most complete selection of standard styles.

GITS consistent quality in design, materials and machining has made Gits Lubricating Devices the standard for industry for more than 40 years.

GITS Lubricating Devices are far-famed for solving tough oiling problems at low cost.

GITS Bros. Engineering Staff—true specialists in lubrication engineering—is at your disposal.

Write today for free illustrated Price Guide Catalog. Use it as your handy reference for lubricating devices.

GITS BROS. MFG. CO.

1854 S. Kilbourn Ave., Chicago 23, Ill.

If you write maker identify as IEN - 3898

PROTECTING . . Neoprene overshoe for men who work around oils, acids

Source: TINGLEY RUBBER CORP.
901-5 Ross St., Dept E. Rahway, N. J.

Neoprene for mechanics

Stretchability due to the use of Neoprene rubber and omission of the usual fabric lining characterizes this new industrial overshoe. At the same time the Neoprene synthetic rubber is not subject to attack by oil, solvents, acids. If dirt gets on the inside the user can turn the overshoe inside out, sponge off the smooth inner surface. Weight is 9 oz. each. Three sizes fit shoes from No. 6 to No. 12.

If you write maker identify as IEN - 3899

SEALING . . Caulking compound fills openings in masonry, metal, wood

Source: DAVID E. LONG CORP.
220 E. 42nd St., 24th Floor, New York 17, N. Y.

List prices
$6.30 and $19.75

A **base compound** and a catalyst are packaged in separate containers and are shipped together to mix prior to application of this new Del black caulking compound. Two packaged sizes contain 8¾ and 2¼ lb. of the base material with 1¼ and ¼ lb. of the catalyst. Mixing is in proportion of 7 to 1 between base compound and catalyst. Application is with a knife, trowel, or caulking gun.

Applications include crack filling in concrete floors, sealing around pipe openings through walls, tanks or equipment, sealing metal ducts, conduits and pipe at the joints, caulking around window sash, filling for expansion joints in concrete structures. The material remains in condition suitable for working for three hours at 75 deg. F. It cures in 36 hours.

If you write maker identify as IEN - 3900

GAGE . . Scriber head on column to mark or check height

Source: H. E. DICKERMAN MFG. CO.
319-23 Albany St., Springfield 4, Mass.

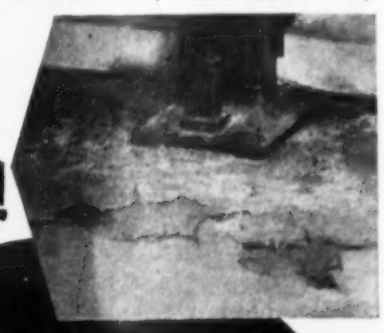
Simplified design

Column length is 18 or 24 in. in this new simplified height gage. It consists of a base, vertical column and clamping slide equipped with a fine adjusting screw and a scriber point. The head can be rotated around the column to mark or measure work standing beside the gage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3901

RUINED FLOOR starts here!



Avoid continual, costly floor re-surfacing!

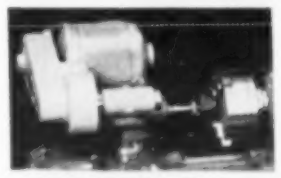
SEE HOW **HEXTEEL**® or **FLOORSTEEL**® meet "floor-patching" problems and — SAVES YOU MONEY!

PAGES 30-31

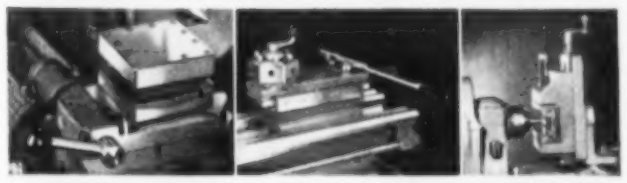
If you write maker identify as IEN - 3902

SOUTH BEND Lathe Attachments

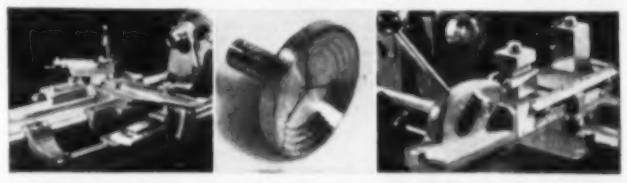
- *Increase Lathe Versatility*
- *Simplify Difficult Jobs*



Internal Grinder



Turret Tool Block — Handlever Bed Turret — Milling Attachment



Taper Attachment — Step Chuck — Handlever Cross Slide

10-in-1 Tool Holder — Handlever Collet — External Grinder

WRITE FOR CATALOG 5102 **SOUTH BEND LATHE**

Building Better Tools Since 1906 • SOUTH BEND, INDIANA

If you write maker identify as IEN - 3903

Shells, beads, or American dollars—no enterprise is successful unless it shows a profit. Kester quality and performance assure you profitable production results at the lowest possible cost. To put more "wampum" in *your* "wigwam," always insist on Kester Solder!

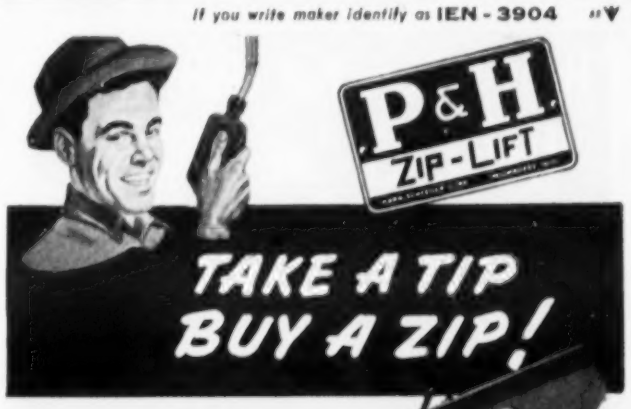
HAVE YOU written for your free copy of the Kester Technical Manual, "SOLDER and Soldering Technique"? Won't you do it today?

KESTER

SOLDER COMPANY

4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 3904



Whatever your handling problems include, chances are the Zip can save you time and money with fast, effective "thru-the-air" handling. It's a real wire rope electric hoist — with full magnetic push button control. Safer — more dependable — built for lifetime service. 2,000 lbs. capacity; with bolt, hook, or trolley mounting. It's America's finest small hoist.

SEND FOR YOUR FREE COPY

This fully illustrated 20-page bulletin will give you many cost-cutting ideas. Write for it today. Ask for NEW ZIP-LIFT Bulletin.

HARNISCHFEGER CORPORATION
MILWAUKEE 46, WISCONSIN

If you write maker identify as **IEN - 3905**

HIGH PRESSURE REDUCING VALVE for AIR or GAS SERVICE

FISHER® TYPE 1301F

INLET PRESSURE UP TO 3000 PSI
OUTLET PRESSURE 10 TO 150 PSI

TYPE 1301F is commonly used in conjunction with pilot operated controllers where high pressure operating medium is used. They are also used in general industrial applications for high pressure reduction of non-corrosive air or gas.

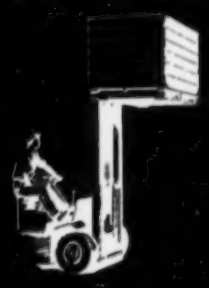
CONSTRUCTION:
All forged bronze construction with glass impregnated Teflon valve disc, stainless steel orifice. Furnished with one inlet connection and two outlet connections of ¼" pipe size.

PRESSURE RANGE:
Suitable for inlet pressures up to 3000 PSI, reduced pressure spring ranges of 10 to 75 PSI, 50 to 150 PSI. Adjustment screw for easy adjustment of reduced pressure setting.

FISHER GOVERNOR COMPANY
Marshalltown, Iowa

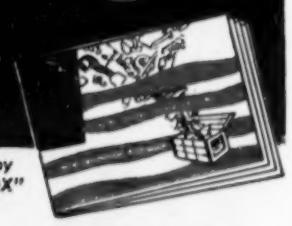
If you write maker identify as **IEN - 3906**

Generalift ★★★★★ PALLET BOXES



cut materials handling costs 50%

WRITE US FOR DETAILS

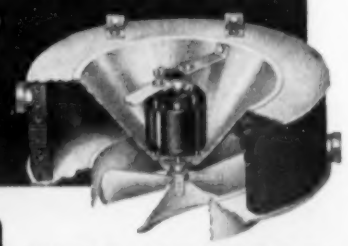


Send for your Free Copy of "THE GENERAL BOX"

General ★★★★★ BOX COMPANY
GENERAL OFFICES: 1815 MINER STREET
DES PLAINES, ILLINOIS
DISTRICT OFFICES AND FACTORIES: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. General Box Company of Mississippi, Meridian, Miss. Continental Box Company, Inc., Houston, Dallas

If you write maker identify as **IEN - 3907**

Heat Where You Need It... QUIETLY with



DUNHAM UNIT HEATERS

You're looking into Dunham's new Vertical Discharge Unit Heater—designed to throw heat *exactly* where needed, while maintaining perfect balance between air volume and final air temperatures.

Note the sturdy motor support cone that directs air from heating element to fan and protects motor from excessive heat and dust; the resilient motor mountings that minimize noise and vibration.

Dunham's improved header design assures uniform steam distribution, eliminates air pockets. For complete information, WRITE FOR BULLETIN 1301-11.

DUNHAM

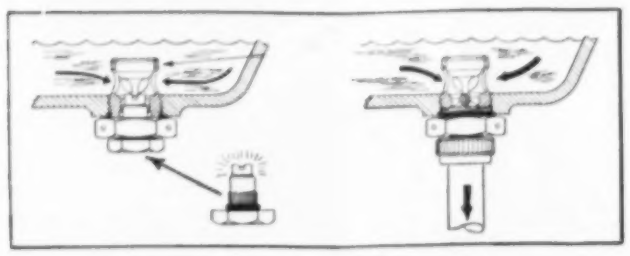
C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada:
C. A. Dunham Co. Ltd., Toronto
In England:
C. A. Dunham Co. Ltd., London

Quality first for fifty years

If you write maker identify as **IEN - 3908**

SEPARATING . . Magnetic drain valve holds metal chips, controls oil flow

Source: TECHNICAL DEVELOPMENT CO.
1228-A Cherry St., Philadelphia 7, Pa.



List price ranges from $4.50 to $12.50

New combination of gravity closing valve, magnetic insert plug and oil drain attachment comprises the Tedeco magnetic drain unit. Application is at the bottom of an oil reservoir such as the crank case for an engine. The valve assembles in vertical position and, in normal service, the magnetic insert plug is threaded into the valve body.

The insert plug attracts ferrous particles and is removed from time to time to clean them off. Removal of the plug permits the valve plunger to seat and prevent loss of oil from the enclosed space. The plug is removed and the drain attachment is threaded in its place to open the valve when the oil is to be drained out.

Four sizes in the line apply in threaded ⅞ to 1 1/16-in. openings. All four take the Type D-730 drain attachment.

If you write maker identify as **IEN - 3909**

MIXING . . Hand attachment for 5 gal. containers includes spout

Source: MARIEN METAL PRODUCTS CO.
1218-22 E. 9-Mile Road, Hazel Park, Mich.

Conditions the paint

Prop Industrial is a new hand operated mixing attachment. It consists of a cast aluminum cover with an integral pouring spout, clamps for water-tight attachment to a 5-gal. container and a hand crank and shaft terminating in a pair of pitched paddle blades. The spout is fitted with a water-tight adjustable cover. The container can be fitted into a tilting cradle which also is available.

The attachment is particularly suited to stir paint and keep it in condition until its container has been emptied. A companion attachment, known as Professional, includes a mounting bracket with a stirring lever shaft and blades for use on an open 5-gal. container.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Is your catalog file up to date?
See page 78.

If you write maker identify as **IEN - 3910**

GRIES DIE CAST GEARS & PINIONS ARE BIG NEWS!

DIE CAST IN ONE PIECE!

Gries eliminates costly manufacturing and assembly of 2 to 4 separate parts . . . and the savings are all yours! Independent tests prove zinc alloy gears wear well, as they are to some degree self-lubricating. Integral one-piece assemblies can be made with shafts as well as center holes; ALL parts are produced to individual specifications. Gears available up to 1 5/16" outside diameter by 1/16" face width; wider faces as diameter decreases. Many gears, pinions, and combinations can be furnished without tooling charges from stock dies. There is a nominal charge for extra close precision requirements, and special designs.

Write TODAY for information about Gries standard components. Send specifications for prompt estimates.

America's Foremost Producer of Tiny Zinc Die Castings

GRIES REPRODUCER CORP.
797 E. 132nd St., N. Y. 54 • Phone: MOtt Haven 5-7400

If you write maker identify as **IEN - 3911**

INDUSTRIAL buyers have learned to depend on ANTI-CORROSIVE for fast, dependable service on all types of stainless steel fastenings. Draw on our IN STOCK inventory of more than 7,000 items and sizes and a production capacity geared to produce precision fastenings in large or small quantities, from huge ⅞" hexagon head bolts to tiny #0-80 machine screw nuts.

Write for Catalog 53V today.

anti-corrosive metal products co., inc.
castleton-on-hudson, new york

If you write maker identify as **IEN - 3912**

A RUT CAN LEAD TO RUIN!

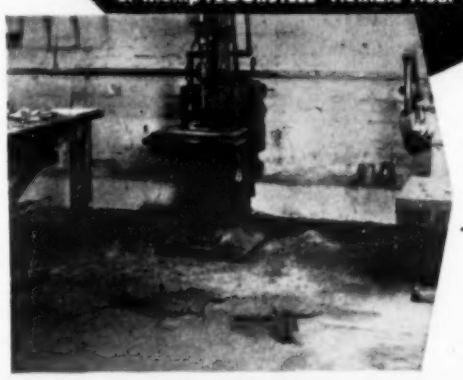
a "patch" in time

- Avoids costly floor expense later
- Saves damaged materials
- Prevents possible personal injuries

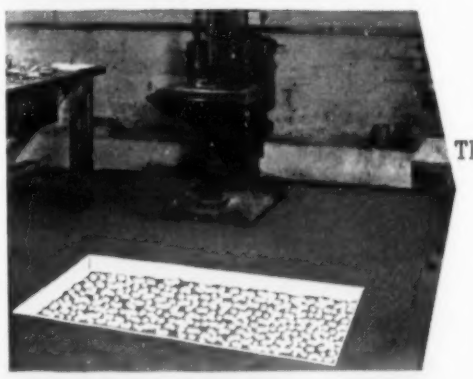
Repair now—quickly, easily—with

HEXTEEL®

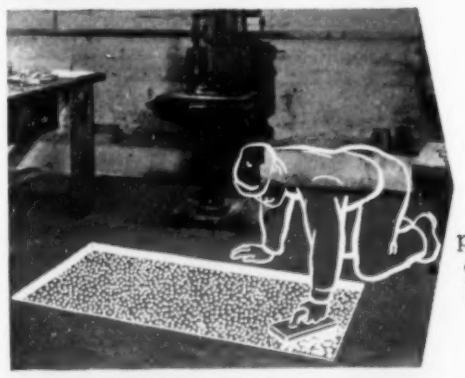
Klemp Heavy-Duty SURFACE ARMOR
or Klemp FLOORSTEEL® Flexible Floor Armor



1 Here is a danger spot—an accident liability demanding attention.



2 The worn area is cut out, boxed and built up with a solid foundation.



3 Cut out surface is leveled with primer coat to exact depth of Klemp armor.

Klemp Metal Grating Corp., 1371 No. Branch St., Chicago 22, Illinois

If you write maker identify as IEN - 3914

• TOOL CRIBS • STOCK ROOMS • MACHINE SHOPS

Saves Time hunting through stacks of packaged drills. Compartments hold a gross of small sizes—a dozen or more of the larger ones. Raised letters on easy sliding drawers . . . hammerlin gray baked enamel finish . . . 14½"x7¼"x7¼".

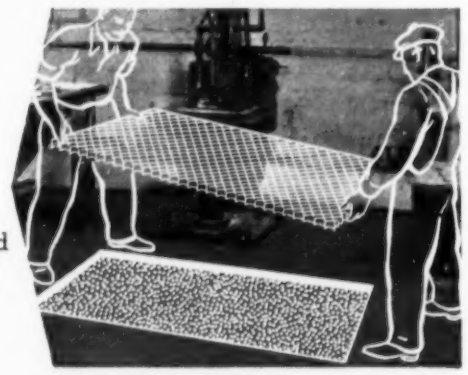
Write for Circular
Model No. 1: Fractional drills 1/16" to ½"
Model No. 2: Number drills 1 to 60
Model No. 3: Letter drills A to Z

HUOT MFG. CO.
565 NORTH WHEELER STREET
ST. PAUL 4W • MINNESOTA
"HUOT is pronounced HEW-OT"

If you write maker identify as IEN - 3915

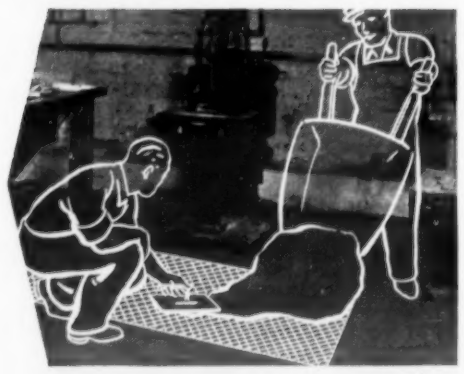
Hexteel or Floorsteel cuts to size!
Installation is fast . . . cost is low

4



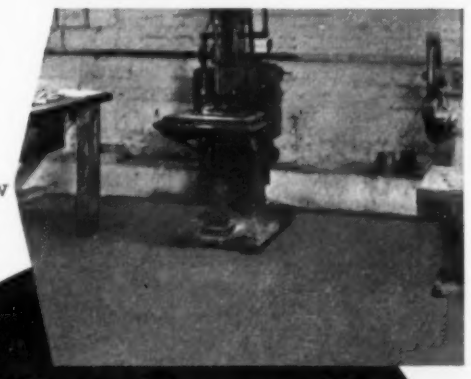
Klemp Hexteel, in this case, is cut to size and laid in place.

5



The filling material is poured in place and leveled carefully.

6



The floor, when set, now becomes as durable as steel itself.

Solve all floor maintenance problems with HEXTEEL®
Klemp Heavy-Duty SURFACE ARMOR
or Klemp Floorsteel® Flexible Floor Armor

FREE! Facts about HEXTEEL®, the heavy-duty surface armor — and FLOORSTEEL®, the flexible floor armor that rolls out like a rug. Fully illustrated.

We Tread The World with Safety
KLEMP METAL GRATING CORPORATION
1371 North Branch Street, Chicago 22, Illinois
Plants and Warehouses at
Chicago, Ill. and Houston, Tex.

*Trademark registered
Klemp Metal Grating Corp.

If you write maker identify as IEN - 3917

CHUCK . . Air operated diaphragm made of steel with integral work jaws

Source: SHEFFER COLLET CO.
1948 W. Bay St., Traverse City, Mich.

Bulletin on request

Super-Grip trade names a new diaphragm chuck in which air pressure is multiplied on an 8 to 1 ratio to flex a steel diaphragm and open the integral steel jaws. When air pressure is released, the diaphragm returns to its normal position and the jaws close in a very small amount to grip the work. The chuck is available in specified work shapes and sizes to grip internally or externally and to mount on a specified machine tool for holding work.

If you write maker identify as IEN - 3918

LUBRICATING . . Cutting compound particularly for stainless steels

Source: ANCHOR CHEMICAL CO.
10719-23 Briggs Road, Cleveland 11, Ohio

Features
lubricity

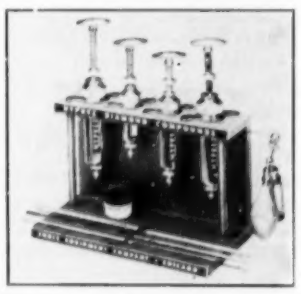
Anchorlube is a new cutting lubricant available in semi-paste and liquid forms. It has been developed for general machining applications, particularly on stainless steels and on alloys that are normally tough and hard to cut. The material has no objectionable odor and will not turn rancid. It is non-injurious to a worker's skin and provides a permanent emulsion in hard or soft water.

The formula includes non-evaporating stabilizing agents, a detergent and a rust inhibitor. Packaging is in quarts, gallons, and drums containing 5, 20, 30 and 55 gallons. List price is $1.02 per gal. in 55-gal. drums.

If you write maker identify as IEN - 3919

LAPPING . . Wood bench rack for diamond compound applicators

Source: ENGIS EQUIPMENT CO.
429-33 S. Dearborn St., Chicago 5, Ill.

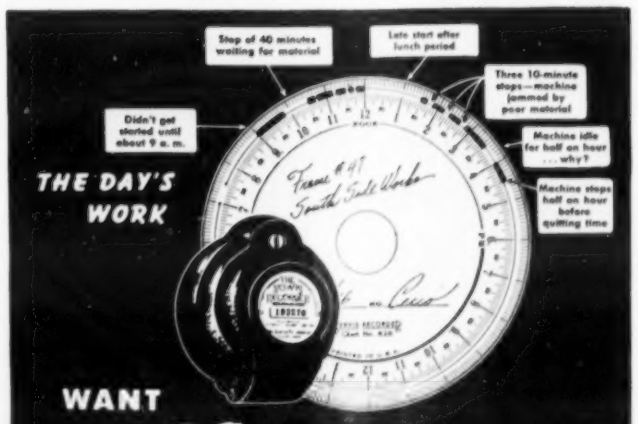


Supply holder

Four applicators holding 5 to 18 grams of Hyprez diamond compound are held by this new bench stand. It also provides spaces for lapping sticks, a hook for a fluid atomizer and shelf space for bobs, jars. The rack is made of maple with dowelled joints and is finished in machine tool gray. It is available to users of company's lapping compound.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3920



WANT MORE MACHINE HOURS?

FIRST FIND OUT ALL THE DOWN TIME

Make every machine now work harder and produce more. How? Well, the first step is to find out if any valuable time is now being wasted by machines *standing idle* at odd moments. And the way to do *that* is to clamp a little SERVIS RECORDER on each one of your machines. Then you'll get the whole story—see chart above. Write for our folder—"*A Busy Plant.*" The Service Recorder Co., 1375 Euclid Ave., Cleveland 15, Ohio.

The Servis Recorder
SHOWS UP ALL IDLE TIME!

If you write maker identify as IEN - 3921

Bend a Variety of Materials

Accurately, Easily, Quickly with a versatile DI-ACRO* BENDER

Simple and complex bends can be made in ductile materials. Capacity of five hand models is from 1/16" wire to 1" round mild steel bar. Tooling is available for most forming requirements in solid materials and tubing, also many special accessories.

DI-ACRO HYDRA-POWER BENDER

A universal hydraulically operated bending machine that is equally as flexible as hand operated machine. Di-Acro Hydra-Power Benders are especially designed for those long runs and heavy bending operations which are impractical for manually operated equipment.

WANT MORE INFORMATION?
Send for New 32-Page Catalog
**Pronounced Die-ack-ro*

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue • Lake City, Minn.

If you write maker identify as IEN - 3922

Now! 100% Grit-Free Wiping and Polishing!

Kimwipes*
INDUSTRIAL TISSUES

End the dangers of dirty, scratchy cloths used over and over again! KIMWIPES* industrial wiping tissues are far safer—because they're *disposable*. So inexpensive, a fresh, clean tissue can be used for each application—then thrown away!

KIMWIPES are clean, soft, pleasant to handle—100% free of abrasive matter. Each tissue is a "man's handful" and can absorb up to 16 times its own weight in liquids. Recommended for wiping safety goggles and shields, wiping up light oils and hazardous chemicals, cleaning instruments and highly finished surfaces. In the handy "serve-up" package, KIMWIPES can be conveniently located at several spots in your plant—they serve just *one* at a time.

Order a supply today. For further information, fill out coupon below or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMWIPES INDUSTRIAL WIPING TISSUES

A Product of Kimberly-Clark

*T. M. REG. U. S. PAT. OFF. & CAN.

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin Dept. DD-43
Please send me Kimwipes literature.

Name _____
Firm _____
Address _____
City _____ *Zone* _____ *State* _____

If you write maker identify as IEN - 3924

Your kind of . . .

Solenoid Valves

There *IS* something better in solenoid valves—the new Marsh Electrimatic. Bodies machined from solid brass stock mean extra strength, greater dependability. Coils are moisture and frost proof. Valves are tight seating, smooth, positive, quiet. Types for wide range of application: direct acting—or pilot operated for large capacity.

. . . Outline your conditions and we will tell you how we can help you with your Solenoid problems.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp.
Dept. A, SKOKIE, ILL.
Export Dept., 155 E. 44th St., New York N. Y.

If you write maker identify as IEN - 3925

PIC of the Pack!

New Equipment Favorites — 100% Zinc Plated

PIC STEEL UNIONS*

Just the union for makers of original equipment, Pics are bright, good looking . . . and speed assembly and installation of your machines. Open end wrenches can be used because ends are uniformly flat-sided, uniformly parallel. Ends are strong, too — of heavy steel pipe coupling stock. Special wedge type bronze seat assures tightness. Zinc plating (even on threads) for maximum rust protection. And the best news is Pics cost *less* than a galvanized, *no more* than a black malleable union!

*For 150# Service...
Write for FREE SAMPLES

DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN - 3926

TOOL and DIEMAKERS!

Move Ahead Faster in Your Job!

Get This Tool and Die Steel

HANDBOOK

Over 100,000 copies in use!

INCLUDES AN 80-PAGE TOOL AND DIE STEEL SELECTOR alphabetically arranged for fast, dependable selection of the proper steel for every tool and die.

564 pages
355 illustrations
PRICE ONLY $2.00

No other book offers such complete, up-to-date tool and diemaking information. "Tool Steel Simplified" covers everything from selection of the right steel to heat treating methods and equipment. Valuable facts on how design affects heat treatment, hardenability tests, heat treating time, furnace atmosphere, trouble-shooting.

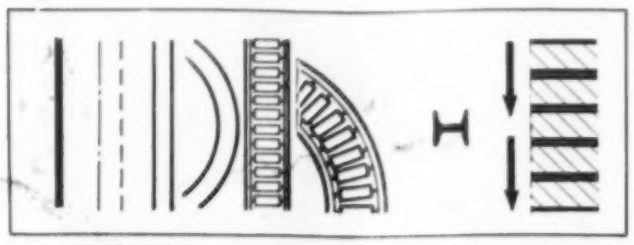
The Carpenter Steel Co., Dept. 8, Reading, Pa.
Please send "Tool Steel Simplified" at low price of $2.00. Check or money order enclosed.

NAME
ADDRESS
CITY ZONE STATE

If you write maker identify as IEN - 3927

LAYOUT . . Equipment templates and sectioned sheet for blue printing

Source: F. WARD HARMAN ASSOCIATES
253 New York Ave., Dept. N-2, Halesite, N. Y.



Ask for illustrated catalog and price list

New symbols to show aisles, direction arrows, building columns, conveyors, boundry lines, windows, walls, have been added to the company's scale size templates, previously described IEN-2408-52. The symbols are reproduced on transparent plastic tape in a ¼-in. to 1-ft. scale. The tape is made self-adhesive on one side and is supplied in 324-in. rolls.

Application is on a sectioned transparent plastic grid sheet to conform with an existing or proposed plant layout. The completed assembly is run through a contact printing machine to produce any required number of copies. The template can be removed for use again after the copies have been made.

If you write maker identify as IEN - 3928

HEATING . . Truck space unit burns liquefied petroleum gas

Source: RUE R. ELSTON CO.
2372-77 University Ave., Dept. KP, St. Paul 4, Minn.

For a warm interior

Cargo Heater is a new self-contained space unit for installation in a motor vehicle, truck or trailer. It is fired with propane gas supplied from a liquid storage carried in one or two bottles. It is controlled by thermostat and meets ICC Flue Vented Cargo Space Heater requirements. Two sizes are available for trucks measuring 18 ft. in length or less and for trucks larger than this size.

The heater is held to the side of the trailer or truck body by brackets permanently mounted on the wall. It can be mounted or taken out in about two minutes. The burner is a complete assembly that can be serviced after removing two bolts. The burner flame is enclosed and shuts off immediately if the vehicle is overturned. An excess flow valve shuts the gas supply off upon separation, breakage or disconnection of the fuel line between the bottle and heater.

Identify as IEN - 3929

Lintern Corporation is offering two new air-conditioning units for use in crane cabs. They are suited for comfort cooling in ambient temperatures to 115 and 140 deg. F. This compares with the 180 deg. F. served by the previously developed designs. Both new units will cool to a range between 80 and 85 deg. F. Your crane operators will like them.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3930

NYLINED* BEARINGS

. . . with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

*For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.
Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as IEN - 3931

FOR PIPE JOINTS Plasgon

THE PIPE JOINT CEMENT THAT STAYS FLEXIBLE, ABSORBS SHOCKS AND VIBRATION

Make Plasgon part of your Maintenance Department. It's an ideal all-purpose industrial adhesive . . . seals pipe joints permanently. Impervious to oil, gasoline, glycol, steam, all common solvents. Resists heat up to 350° F. and withstands considerable pressure. Good for making emergency plastic gaskets. Keep Plasgon handy.

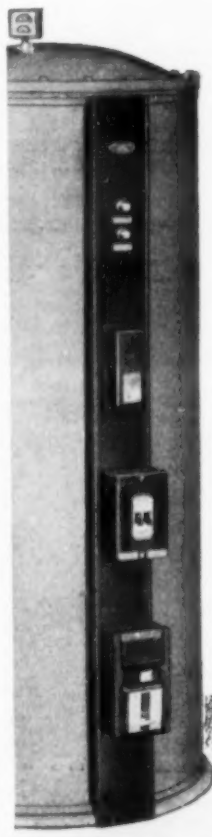
Write today for free sample and complete information.

SAMUEL CABOT, INC.
433 Oliver Bldg., Boston 9, Mass.

If you write maker identify as IEN - 3932

clean HYDRAULIC OIL STOPS

downtime and costly repairs to hydraulic equipment



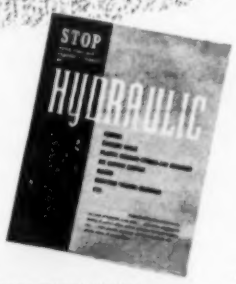
Honan-Crane HYDRAULIC OIL PURIFIER

- Removes Solid Abrasive Contamination
- Removes Corrosive Products of Oxidation
- Prevents Sludging
- Keeps Oil CLEAN and SAFE to Use Indefinitely

Sizes for direct connection to individual machines . . . mobile units for general plant service.

Get **FREE Booklet**

8-page "Hydraulic Bulletin" with case histories describing profitable advantages of Honan-Crane Purification in many critical hydraulic applications. Write for your copy!



ALL HONAN-CRANE EQUIPMENT IS SOLD ON A PERFORMANCE GUARANTEED BASIS

Honan-Crane Corporation
802 Wabash Avenue, Lebanon, Indiana
A Subsidiary of
Houdaille-Hershey Corp.

WORLD'S LEADING OIL FILTER MANUFACTURER

In Canada: E. W. PLAYFORD, LTD., Montreal 28
W. E. MICKLETHWAITE Toronto 18

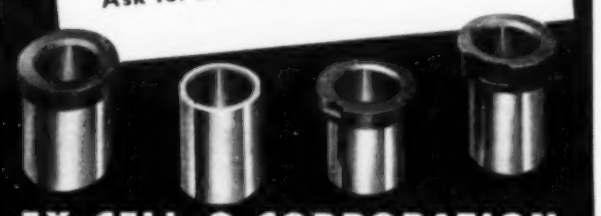
If you write maker identify as IEN - 3934

XLO

Ex-Cell-O Drill Jig Bushings Have All These Features . . .

- Selected premium grade tool steel.
- Precision ground inside and out and under the head.
- Concentricity assured by grinding on arbors after the holes are finished.
- Hardened to 62-64 Rockwell "C."
- Uniformity of material, dimensions, finish, and hardness.
- Prompt delivery from stocks of standard sizes in Detroit, New York, Los Angeles, and Toronto.
- Largest bushing users in the country are Ex-Cell-O customers.

Ask for Bushing Catalog No. 35371.



EX-CELL-O CORPORATION
53-17 DETROIT 32, MICHIGAN

If you write maker identify as IEN - 3935

Letters! Reports! Drawings! Invoices! Orders!

The Amazing Desk-Top OZAMATIC

Copies from Many Originals . . . in Seconds

No Retyping! No Proof-reading! No Stencils! No Darkroom! No Messy Inks!

JUST feed in original documents or drawings on ordinary translucent materials. One speedy, silent revolution does the work, and out comes your first copy—*clean, dry and ready-to-use!* Copies at a rate up to 1,000 an hour . . . at a cost of less than 1½c each!

You'll find countless uses for the entirely self-contained OZAMATIC. It makes Ozalid copies up to 16 inches wide, at speeds up to 30 feet per minute. Larger Ozalid machines handle wider originals, and have even greater production capacity. Any girl in your office can learn to operate any Ozalid machine in five minutes.

Write today for free, illustrated literature—or call the Ozalid distributor listed in the classified pages of your phone book.

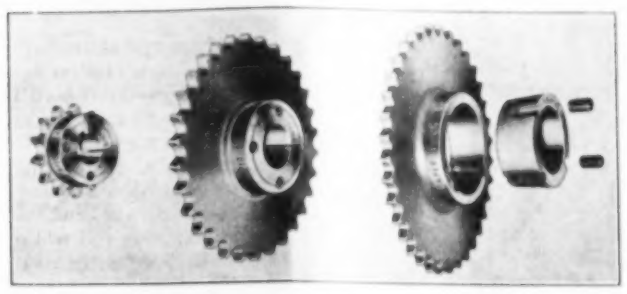
Cut Copying Costs . . . Use OZALID

Johnson City, N. Y.
A Division of General Aniline & Film Corporation.
"From Research to Reality."
Ozalid in Canada—Hughes Owens, Ltd., Montreal.

If you write maker identify as IEN - 3937

DRIVE . . Roller chain sprockets mount on interchangeable split hubs

Source: DODGE MFG. CO.
500 S. William St., Mishawaka, Ind.



Data and list price sheets on request

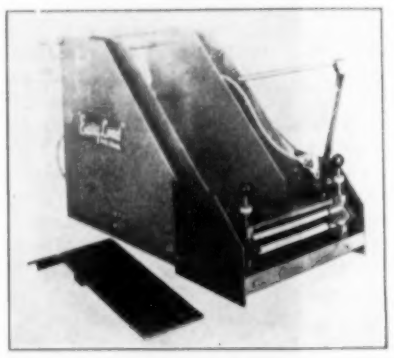
New application has been made of the company's Taper-Lock split hub in a new line of roller chain sprockets. The assembly provides for quick interchange of the hub to fit given shaft diameters. As in the previous designs the bushing is featured by its flush fit in the hub, as shown in the illustration. Two socket head screws are employed to pull the hub into place. The two can be removed from their threaded holes and one of them applied in a third hole to press the bushing out when a change is to be made. Drive is by means of a key between the shaft and the bushing.

A range of Type B steel sprockets is now available from stock from ½ to 1¼-in. pitch. Sprocket sizes range from 9 to 112 teeth in the smallest pitch and from 11 to 60 teeth in the largest. Chain is packaged in 10-ft. lengths, can be supplied in 50 and 100-ft. reels. Maximum stock bore for the bushing is 1 to 2½ in. in the ½-in. pitch. It ranges from 1⅝ to 3 in. for the 1¼-in. pitch sprocket size.

If you write maker identify as IEN - 3938

HANDLING . . Motor driven cradle takes metal coils for feed to machine

Source: ROWE MACHINERY & MFG. CO.
1508 N. Industrial Blvd., Dallas, Texas



Coil rolls into place

New attachment, mounting a pair of motor driven pinch rolls, is now available for the company's Easy Load coil cradle, previously described IEN-244-52. The attachment operates with the regular cradle drive to provide positive feed for coil stock that is normally difficult to handle and stock which tends to rewind.

Links between the cradle rolls and the pinch rolls provide braking action on the body of the coil when the motor circuit is opened so a thin stock coil cannot coast and buckle. The pinch rolls are hardened and are mounted in sealed ball bearings. Largest assembly in the line will take strip coils weighing to 1½ ton and measuring to 15 in. in width by 48 in. in outside diameter. The attachment takes stock measuring 0.01 to 0.15 in. in overall range of thickness.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3939

"PRESSURE OR VACUUM?"

Johnson FLEXIBLE SEAMLESS METAL HOSE

FOR CONVEYING UNDER PRESSURE OR VACUUM
STEAM • OIL • WATER • GAS • REFRIGERANTS

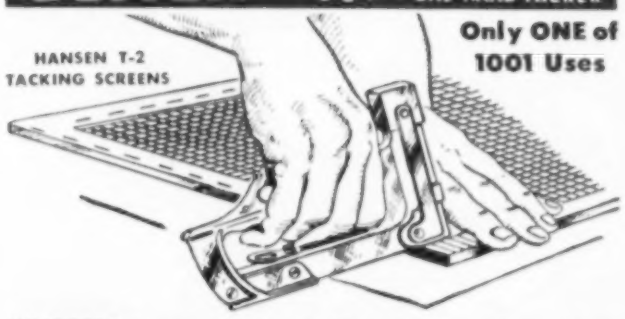
MANUFACTURED FROM SEAMLESS TUBING WITHOUT JOINTS, WELDS OR PACKING, WITH HEATPROOF FITTINGS ATTACHED • *FOR HOT OR COLD APPLICATIONS*

WRITE FOR BULLETIN J-3

JOHNSON METAL HOSE, INC.
P. O. BOX 952 • WATERBURY 20, CONN.

If you write maker identify as IEN - 3940

YOU CAN DO IT BETTER with HANSEN ONE-HAND TACKER



Only ONE of 1001 Uses

FASTER! Screen Tacking is illustrated merely to show the *versatility* of the Hansen Tacker. It is adaptable to a wide variety of uses . . . saves *time, steps, materials!*

BETTER! With Hansen you place the Tacker accurately in driving position . . . exactly where you want it. Grip the handle. The Tacker drives the staple with precision and accuracy. Powerful action drives each staple securely.

AT LESS COST! Portable . . . self-contained . . . easy to operate . . . balanced design . . . removable Take-up Jaw . . . are Hansen features that cut costs.

(Model T-3-4 Hansen Tacker)

36 MODELS
80 STAPLE SIZES

Request Booklet . . . today

A.L. HANSEN MFG. CO.
5051 RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

If you write maker identify as IEN - 3941

124,800 holes per day! . . . using six DUMORE Automatic Drill Heads

Parts are hand loaded in an automatic indexing rotary table with 24 stations. Peak production has reached 25,000 pieces.

A Dumore Precision Drill Grinder sharpens drills after a full day's production. Maximum drill life per grind has reached 23,000 holes.

Get amazing cost-reducing benefits with Dumore tools

ONE west-coast manufacturer uses six continuous running Dumore Automatic Drill Heads to drill tiny brass parts — 20,800 per head per day. Using a No. 71 drill (dia. .026") and hole depth of .069", this company reports amazingly high production, plus slashed costs of drill breakage, down-time and scrap loss.

Amazing too, are the results they achieve using a Dumore Precision Drill Grinder to sharpen drills for this job. They actually get a full day of continuous production for every Dumore sharpened drill, without stopping to regrind.

Get all the information about these tools. Ask your nearby industrial distributor or write,

THE DUMORE COMPANY
1319 Seventeenth Street • Racine, Wisconsin

If you write maker identify as IEN - 3942

Leading Engineers Specify wheelco PANELMOUNT

Instrumentality

capacitrol with capaciline

INSTANT RESPONSE • "Electronic Link" gives accurate, instantaneous control.

STRAIGHT-LINE OPERATION • Built-in Capaciline gives economical equivalent of proportioning control.

NO TIME LAGS • Heat transfer lags reduced to a minimum. Avoids rejects and unsatisfactory production.

indicates and controls:
TEMPERATURE
VOLTAGE
CURRENT
SPEED
SIMILAR PROCESS VARIABLES

Nationwide Engineering and Sales Offices

BARBER-COLMAN

WRITE FOR BULLETIN PC-1

wheelco instruments division
BARBER-COLMAN COMPANY
1204 ROCK ST. • ROCKFORD, ILLINOIS, U. S. A.

If you write maker identify as IEN - 3943

Small precision metal parts... Torrington makes them better, and for less!

FREE CATALOG — shows the great variety of small parts we can produce inexpensively and promptly. Send for copy today!

If your product uses small precision metal parts . . . pivots, pins, dowels, rollers, mandrels, needles, punches, etc. . . . send us your blueprints for a prompt quotation.

As a leading contract fabricator, TORRINGTON is equipped with the special machinery to produce in any quantity for quick delivery at low prices.

THE TORRINGTON COMPANY
Specialties Division
360 Field Street • Torrington, Conn.

Makers of
TORRINGTON NEEDLE BEARINGS

If you write maker identify as IEN - 3944

Abart GEARS

96 PITCH TO 5/7 D.P.
¼" P.D. TO 18" P.D.

QUALITY GEARS, precision-cut to your specifications

Available in steel, brass, bronze, cast iron, any metal and any non-metallic gear material. All gears are custom cut to specifications.

Spur Gears • Bevel Gears • Worms • Worm Wheels • Helical and Spiral Gears • Internal Gears • Sprockets • Finishing Machine Racks

Send blueprints and specifications (or samples) for quotations on above type gears, worm and worm wheels, or sprockets—any quantity.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers • BIshop 2-2524

If you write maker identify as IEN - 3945

1. SET IT ON YOUR CONCRETE FLOOR
2. MAKE SERVICE CONNECTIONS
3. TURN ON THE STEAM!

You Never Saw a UNIT So Easy to INSTALL and OPERATE!

AMESTEAM GENERATOR

- is fully piped and wired.
- needs no special foundation.
- is factory insulated and jacketed.
- has its own refractories.
- needs no heavy, costly stack.

20 SIZES
10 to 600 h.p.
15 to 200# OIL OR GAS

WRITE FOR FREE BULLETIN TODAY!

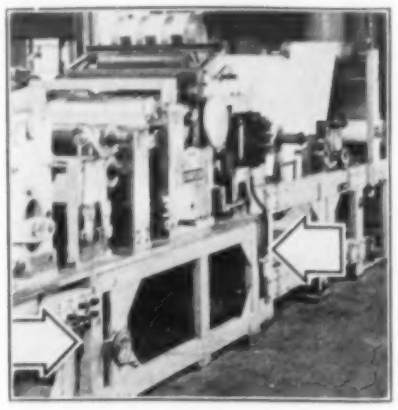
AMES IRON WORKS
BOX F-43
OSWEGO, N. Y.

AMES IRON WORKS
Box F-43, OSWEGO, N. Y.
Gentlemen:
Please send me further information on AMESTEAM GENERATORS and name of the nearest representative.
NAME.....
COMPANY.....
ADDRESS.....
.....

If you write maker identify as IEN - 3946

PROCESSING . . Roll splicer for printing and converting machines

Source: CHAMPLAIN CO.
86-90 Llewelyn Ave., Bloomfield, N. J.



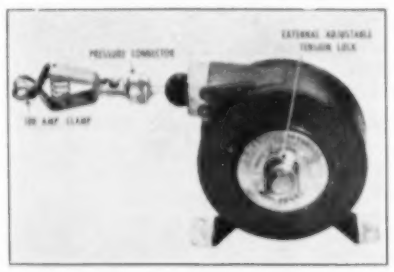
For specified use

New roll splicer applies as a section between a double-roll feed stand and a processing machine. It makes a clean butt splice between a new roll and the end of an expiring roll while the two webs are moving forward at a sustained speed of 300 fpm. The splicing action is "on" only during the actual splicing operation. The rolls and cylinders making up the assembly are disengaged so the web passes through clear at all other times. The splice is completed in 10 ft. of web travel. There is no gap in the splice, no overlap to disturb subsequent operations.

If you write maker identify as IEN - 3947

STATIC ELIMINATOR . . Retriever pays out and retracts grounding cable

Source: ERICSON MFG. CO.
5207-11 Euclid Ave., Cleveland 3, Ohio



Protects aircraft fueling

New design of the company's static discharge reel includes an external adjustable lock that permits increasing or decreasing the tension in the retrieving spring that pulls the grounding cable back into the housing after it has been paid out. The cable is terminated with a pressure connector and a clamp to make electrical contact with the object being grounded.

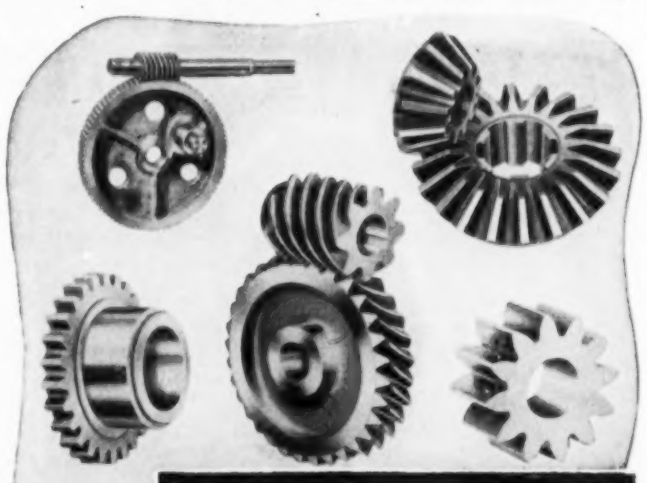
The connector lets go when a predetermined pull is exceeded. This prevents injury to the equipment should an operator fail to release the ground connection before "taking off." The assembly is available with 40 and 80-ft. cables. A grounding bridle can be added when specified. The reel itself is grounded through four separate electrical paths.

Identify as IEN - 3948

Formula 921 designates a cast aluminum alloy available in plate and bar stock for use in jigs, fixtures, tables, press tools. Each piece is accurately machined to specified dimensions within 0.01-in. variation from flatness in all areas. Pioneer Tool Engineering is the manufacturer. Plate sizes range from 96 to 144 in. in length, ½ to 8 in. in thickness, 48 in. in width. The bars are machined on four sides in any size to 8 in. in section and to 144 in. in length. Bulletin "tells all."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3949



SEWALL GEARS

CUSTOM MADE for EVERY NEED

For best results, get in touch with Sewall engineers while your product is still on the drawing board. Close tolerances are efficiently maintained in the production of racks . . . sprockets . . . spur . . . spiral . . . bevel . . . Zerol bevel . . . worm gears. We furnish prompt estimates on any quantity on receipt of your blueprint.

STOCK SPROCKET CATALOG ON REQUEST

SEWALL MANUFACTURING CO.
711 Raymond Ave., St. Paul 14, Minnesota

If you write maker identify as IEN - 3950

NO BETTER PRESS FIT FASTENER has ever been devised than the original GROOV-PIN

The Groov-Pin is primarily a cylindrical pin cut from bar or coil stock. Longitudinal grooves are rolled or pressed into the body to deform the stock within controlled standard limits.

Two of many types of Groov-Pins

Groov-Pin used as hinge-pin in heavy-duty hinged belt assembly

Groov-Pins used as heavy-duty cutters on heavy chain links

When the Groov-Pin is forced into a drilled hole of correct diameter, the constraining action of the hole wall causes the displaced material to flow back and make a locking fit within its elastic range. Resiliency of the pin stock makes it practicable to use the same pin repeatedly.

The Groov-Pin is simple in design, efficient, economical both in price and in cost of application, and it is versatile in its uses. This combination of advantages has never been surpassed by any other pin fastening. It is true even though Groov-Pins have been in use for over a quarter century, essentially in their present form from the beginning. Like the common pin or nail the original design of the Groov-Pin was fundamentally perfect. Therefore, improvement has been impossible. Groov-Pins are assembled in straight drilled holes. No tapping, reaming, peening or milling are required. They can be driven by hand hammer, air cylinder or hydraulic press.

Send for further information

Also manufacturers of Tap-Lok Inserts

GROOV-PIN CORPORATION
1127 Hendricks Causeway, Ridgefield, N. J.

If you write maker identify as IEN - 3951

THROW 'EM AWAY!

CRYSTAL
PAT. APPLIED FOR

CRYSTAL-M

When they're empty of course! Crystal-Clear . . . Fairway throw-away type salt tablet dispensers are now available in two sizes . . . the 500 tablet CRYSTAL and the 1,000 tablet CRYSTAL-M. Inexpensive . . . Neat and attractive for the office as well as factory, these transparent dispensers leave contents always visible.

Fairway throw-away types cost so little that a new unit is more economical than refilling. Simple to use . . . Easily installed. Sanitary . . . Contents are sealed in at the factory.

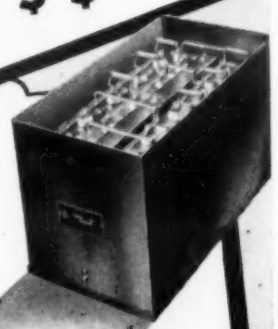
Write today for STASAFE Bulletin No. 552

STANDARD SAFETY EQUIPMENT CO.
232 W. Ontario Street Chicago 10, Illinois

If you write maker identify as IEN - 3952

CASE HISTORIES PROVE YOU CAN SAVE $ $ $

with
SPRAGUE POWER FACTOR CAPACITORS



- CUT POWER BILLS
- AVOID EXTRA EQUIPMENT
- ALLOW BIGGER LOADS
- PROVIDE PLANT FLEXIBILITY

Thousands of installations throughout industry are proving daily that Sprague Power Factor Capacitors installed at each piece of inductive electrical equipment eliminate waste current *right at the source*. Power factor is corrected to the maximum, allowing a greater load at reduced power cost. Need for extra wiring, switchgear, and transformers is often avoided, and plant expansion or moves can be made at minimum cost. *Write for Free 28-page Power Factor Correction Guide.*

SPRAGUE®

Industrial Capacitor Div.
SPRAGUE ELECTRIC CO.
165 MARSHALL STREET
NORTH ADAMS, MASS.

If you write maker identify as IEN - 3953

FREE! Every Maintenance Engineer should have this booklet

Illustrated booklet that deals with your problems . . . how they can be solved quickly and efficiently with this amazing flexible ducting. Ventilation, dust removal, materials handling . . . whatever your requirements, FLEXIBLE's line of tubing will meet them better, cost less. And most important, YOU CAN INSTALL FLEXIBLE'S LINE OF TUBING YOURSELF!

WRITE TODAY!

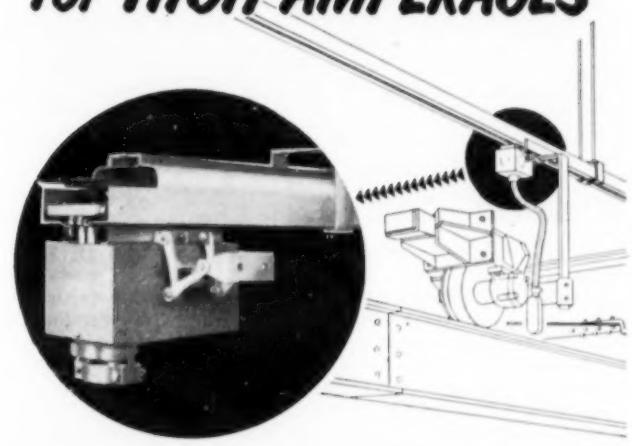
Flexible Tubing CORPORATION

Guilford, Connecticut Pasadena 1, California

For all ducting systems:
FLEXFLYTE®
SPIRATUBE®
AYRTUBE®

If you write maker identify as IEN - 3954

NOW–a completely standardized mobile electrification system *for HIGH AMPERAGES*



HEAVY DUTY FEEDRAIL®

FOR 250, 375 AND 500 AMPERES 250 V., D.C. OR 575 V., A.C., SINGLE OR 3-PHASE

- Now, 250, 375 and 500 ampere FEEDRAIL "HEAVY DUTY" Systems are available in standardized track sections, trolleys and accessories.

"HEAVY DUTY" FEEDRAIL is not an adaptation of a lighter capacity system. Every one of its standardized components is designed and proportioned *expressly* for high amperage and heavy duty service. In addition, it offers the advantages of safety — easy installation — adaptability and mobility so essential to an efficient electrification system.

Existing applications include freight car icing machines — heavy tonnage cranes and hoists — large machine tools, etc.

Write for literature

Sold by leading electrical distributors

52-5A

Never Becomes Obsolete
ELECTRIC FEEDRAIL
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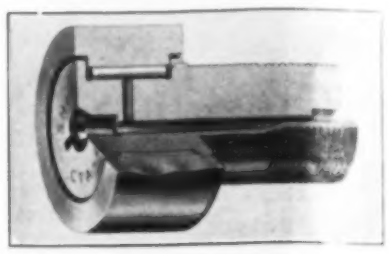
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET · NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 3956

BEARING . . Cam follower unit, needle bearing roll on hardened stud

Source: SMITH BEARING CO.
9 Bear Tavern Road, West Trenton, N. J.



Sizes as specified

Flanged stud in this new cam follower is made of SAE 4615 steel. The bearing end is case hardened to Rockwell C 60. The anchor end, with its SAE fine threads, is left soft so it will not snap under impact or pressure.

Needle rolls support the main roller. Both are made of SAE 52100 steel, through hardened to about 60 Rockwell C also. The roller is held in place by a spring steel snap ring to complete the assembly. Provision is made for a drive type grease fitting.

If you write maker identify as IEN - 3957

PAINTING . . Liquid plastic to protect and identify pipe lines

Source: ARMSTRONG CORK CO.
1012 State St., Lancaster, Pa.

Is applied by brushing

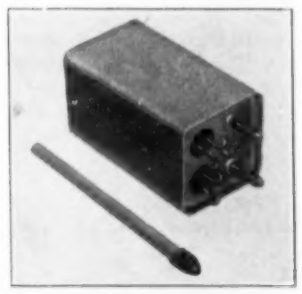
Insulcolor trade names a new liquid plastic for application by brushing or spraying on insulated pipe lines and ducts. It will withstand temperature to 160 deg. F. without cracking, shrinking or crazing. It can be used over heat insulations, cork pipe covering and lagging, cork insulated air conditioning ducts. White and six colors include two shades of green, two of blue, yellow and buff. Application can be made over asphaltic finishes without bleeding.

The dry coating provides resistance to bumping and abrasion. It also is waterproof and thus suited for use inside or outdoors. It is classified as fire retardant when it is dry. The base white material and the desired color tint are shipped in separate containers and mixed on the job. Coverage is 35 to 50 sq. ft. per gal. in a two-coat application.

If you write maker identify as IEN - 3958

RELAY . . Miniature sealed unit, double pole, double throw, 3½ ounces

Source: PHAOSTRON CO.
149-53 Pasadena Ave., South Pasadena, Calif.



For aircraft duty

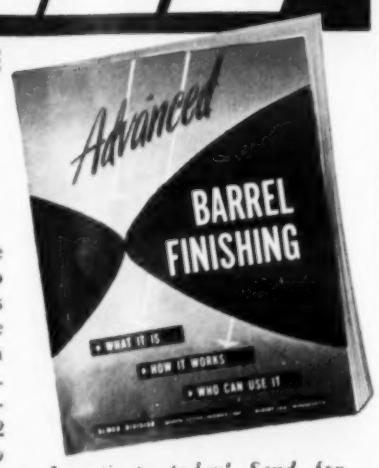
Series PR9100 is a new hermetically sealed relay. It meets shock requirements of Specification MIL-E-5400 and will withstand continuous acceleration of 50 G. Coil power is minimum at 20 milliwatts. Coil resistance is maximum at 15,000 ohms. Contact rating is 3 amp. on 28-volt dc.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3959

FREE

IF YOU PRODUCE PARTS THAT REQUIRE FINISHING OF ANY KIND



This amazing 22-page booklet is *guaranteed* to open your eyes! Gives latest, up-to-the-minute facts — figures — photos on advanced barrel finishing. Shows how single unit installation replaces from 2 to 12 men—*savings up to 95%* on almost all types of parts from large castings to small intricate parts.

Investigate today! Send for your FREE copy of Booklet No. G-4 today.

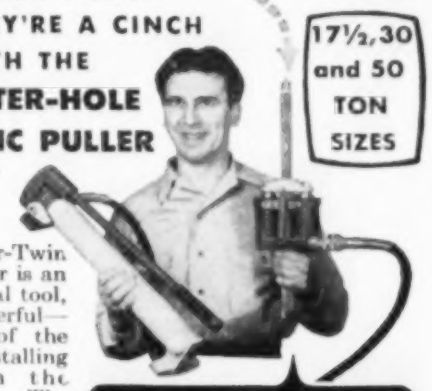
ALMCO Supersheen

AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT — MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 3960

OTC TOUGH JOBS! THEY'RE A CINCH WITH THE CENTER-HOLE HYDRAULIC PULLER

17½, 30 and 50 TON SIZES



Famous OTC CENTER-HOLE Ram permits fast, easy adjustment to the work and interchange from push-puller to sleeve puller to bench press.

The OTC Power-Twin Hydraulic Puller is an ideal, economical tool, compact, powerful—handles 95% of the pulling and installing operations in the average shop. The Power-Twin may be detached from press—used as portable ram—speeds up pulling and installing jobs 75%, eliminates torque—remote control provides safety

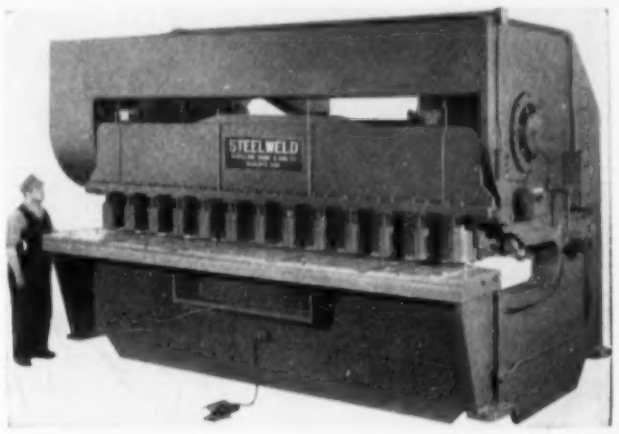
A complete range and variety of Pullers, Adapters and Attachments are available to pull or install sleeves, bearings, races, gears, pinions, couplings, etc.

Amazingly efficient combination of Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller. Every shop will find this unit a must . . . first few jobs pay for it in time, tools and money saved. Move it where you want it . . . it's portable.

See your OTC jobber or write us . . . today.

OWATONNA TOOL CO.
371 CEDAR ST. OWATONNA, MINN.

If you write maker identify as IEN - 3961



CUTS 12 FEET 3/4 INCH STEEL PLATE

1. 30 strokes per minute.
2. Operated by electric foot switch.
3. Cuts by pivoted-blade principle.
4. Fast Micro-Set knife adjustment.
5. 36-inch throat permits slitting wide plate.
6. Lift-up type ball-bearing back gauge.
7. Heavy welded one-piece steel frame.

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4230 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

If you write maker identify as IEN - 3962

with DINGS Magnetic Sheet Floaters

- Non-electric Dings Sheet Floaters separate stacked steel sheets automatically so they're easily grasped by operator for faster feeding
- Prevent feeding of doubles — protect dies
- Handle irregular sizes, odd shapes
- Protect painted and finished surfaces
- Pay for themselves in 2 to 3 months time

PUT Dings Sheet Floaters on trial in your shop. Money back in 30 days if you're not satisfied — write DINGS MAGNETIC SEPARATOR CO., 4755W. Electric Ave., Milwaukee 46, Wisconsin, for details today.

SF 153

DINGS Magnets

If you write maker identify as IEN - 3963

SAFEGUARD valuable parts from damage at LOW COST

S.S.White PLASTIC PLUGS and CAPS

Provide hundreds of dollars worth of protection to expensive instruments or parts during maintenance, storage or shipment. Used on threaded studs or in threaded openings, they protect threads — seal in grease and oil — keep out dirt and moisture.

S.S.White plastic plugs and caps are available in many styles and sizes for N.P.T. standard, machine screw or metric threads. Order a supply today — their low cost makes them a profitable investment.

FOR PRICES AND SIZES, SEND FOR BULLETIN P-5203.

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP. 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 3964

WILL YOUR PLANT STAND A WHITE GLOVE INSPECTION ?

Model 218

This idea may sound far fetched — but it's straight facts that the clean plant, shop or office will have the best chance of landing defense orders.
Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN - 3965

Sign of LASTING SECURITY

Continental . . . the sign of fence economy, stretches your fencing dollar by protecting persons and property years longer than ordinary fence. Continental combines galvanized fabric and heavy, better engineered fittings with sturdy fence erection braced and counter-braced with sturdy pipe, wire and concrete. For proved features and improved protection investigate Continental before you specify any other fence. Write for FREE fence manual.

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana
Send me FREE copy of "Planned Protection" —complete manual on property protection.
Name
Address
City State

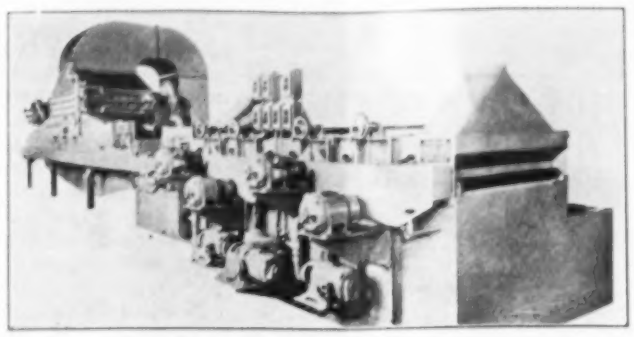
*TRADE MRK. REG. U.S. PAT. OFF.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 3966

LUBRICATING . . Automatic machine applies and dries drawing compound

Source: GILRON PRODUCTS CO.
6005-9 Euclid Ave., Cleveland 3, Ohio



Custom built to given requirements

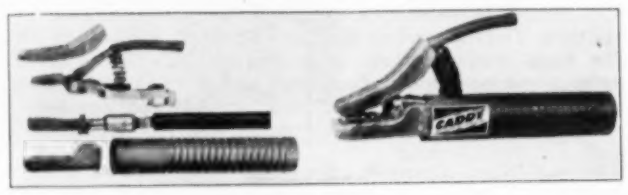
Metal sheets or blanks that are to be formed in a press operation can be put through this new Drawcote machine and then stored ahead of the forming operation. The machine combines cleaning, coating and drying operations to deliver the work ready to be formed or stored. It will take work to 48 in. in width and is available for specified duty.

Rotary brushes apply on both work faces with an alkaline solution in the cleaning operation. Lubricating solution is held in enclosed steam heated tanks in the lubricating portion of the assembly. The lubricated work then passes through a drying oven heated by steam, gas or electricity.

If you write maker identify as IEN - 3967

WELDING . . Arc electrode holder, insulated design, 300 and 400 amperes

Source: ERICO PRODUCTS INC.
2068-72 E. 61st Place, Cleveland 3, Ohio



Cable is welded in

Two new sizes have been added to the company's Type B Caddy electrode holder, previously described IEN-5006-52. As in the previous design, the current is carried by the cable through the Cadweld connection to the electrode jaw so no current passes through any other part of the assembly. This arrangement, combined with the ability of the weld connection to carry rated cable current, prevents spot overheating and promotes cool operation. Two sizes weigh 18 and 19 ounces respectively. The gripper at the rear of the steel body prevents flexing and twisting the cable at the connection.

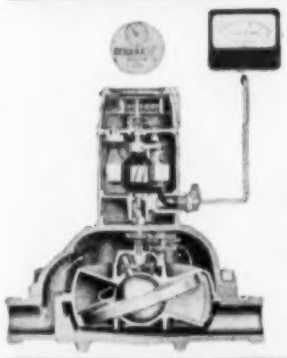
Identify as IEN - 3968

Practical suggestions on things to do and to avoid, in handling ball and roller bearings, are contained in an article in Issue 175 of 4-page PTC Bulletin by Power Transmission Council. J. L. Brusca, Senior Design Engineer, is the author.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3969

Remote indication and control of liquid flow



Hays VERIFLOW meter accurately measures, indicates, and totals the flow of corrosive and hard-to-meter liquids without using weigh tanks, orifice plates, or gage sticks.
With the Hays VERITROL you simply set a knob at the rate of flow desired . . . then, the VERITROL controls the flow of liquid at that set-rate.

for corrosive liquids
Acetic Acid, Aluminum Potassium Sulphate, Ammonia, Calcium Compounds, Carbolic Acid, Formaldehyde, Fruit and Vegetable Juices, Hydrogen Peroxide, Phosphoric Acid, Potassium Hydroxide, Sodium Compounds, Sulphuric Acid (concentrated), Stearic Acid, and many others

Send for a complete description of Hays Veriflow Meter and Veritrol. Bulletin 48-766

THE HAYS CORPORATION
MICHIGAN CITY 16, INDIANA

If you write maker identify as IEN - 3970

Star has 'em WHEN YOU WANT 'EM!

STAINLESS STEEL FASTENINGS OF ALL TYPES
RIGHT OFF THE SHELF

In-Stock-Service on *small or large quantities* • Cap Screws • Machine Screws • Sheet Metal and Wood Screws • Set Screws • Nuts, Washers, Etc.
Class 3 AN Drilled Fillister Heads.
Fast service on special screw machine products.

WRITE, WIRE OR PHONE TODAY
New Catalog Available

Star STAINLESS SCREW CO.
212 Union Avenue • ARmory 4-1240 Paterson 2, N. J.
Direct New York Telephone: WIsconsin 7-9041

If you write maker identify as IEN - 3971

TOWMOTORS IN ACTION IN U. S. INDUSTRY

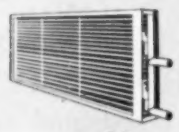
Triple-tier stacking of a 2,088-pound load of heavy chemicals at Westvaco Chemical Division, Carteret, N. J.

Tuck 'em in snug . . . stretch both storage capacity and your operating budget . . . by stacking extra-large loads extra tiers higher. That's just one of many ways that widely adaptable Towmotor takes the hobbles off your materials handling routines for greater efficiency. Any one alone totals up savings that pay for Towmotor many times over. Methods which make these savings a reality are described in a new book titled "Man-Hour Thieves." Write for your copy, and name of your nearest Towmotor Representative, to: Towmotor Corporation, Div. 2604, 1226 E. 152nd Street, Cleveland 10, Ohio.

TOWMOTOR THE ONE-MAN-GANG
FORK LIFT TRUCKS and TRACTORS
TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

If you write maker identify as IEN - 3972

U.S. AIRco EVERYTHING IN AIR CONDITIONING



Coils

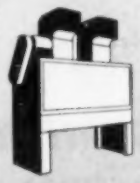
Gas Fired Unit Heaters

Ventilating Blowers

Evaporative Condensers

Housed Ventilating Sets

Meda-aire



Blower Heaters

Engineers and manufacturers of a complete line of finest quality heating, ventilating and air conditioning equipment.

Write Dept. IE 453

U.S. AIRco UNITED STATES AIR CONDITIONING CORP. MINNEAPOLIS 14, MINNESOTA

If you write maker identify as IEN - 3973

PROBLEM:

Dependable Circuitry

SOLUTION: *Leach* **RELAYS**

The efficient performance of *Leach Relays* is always at work delivering dependable, crisp, circuit control, infinite versatility and maximum potentials for use. Here at *Leach* you will find complete engineering, testing and production facilities to help you solve your relay problems.

FOR BETTER CONTROLS THROUGH BETTER RELAYS
—Specify Leach

LEACH RELAY CO.

5915 AVALON BOULEVARD, LOS ANGELES 3, CALIFORNIA
Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 3974

DON'T get your neck in a NOOSE!

Use Milford's scientific approach to your fastening problem.

If you were solely responsible for recommending a machine tool for your company's production needs, you'd make pretty certain that your choice would perform correctly, efficiently, with the lowest possible dollar expenditure. Right?

It's important, too, to do likewise in recommending fasteners, and functional components that may be cold-headed. Millions of dollars yearly are wasted by not giving these parts . . . at the design stage . . . the same careful scrutiny that is given major production equipment.

Why not consult our cold heading engineers before designs are "frozen" . . . while planning is fluid enough to save you excessive costs?

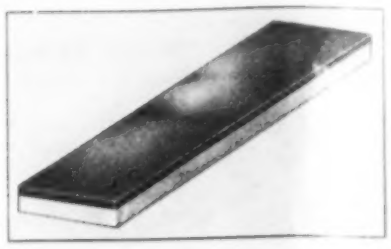
EST. 1919
MILFORD
the name to rivet in your memory for fasteners

THE MILFORD RIVET & MACHINE CO.
927 Bridgeport Ave., Milford, Conn.
876 Illinois Ave., Aurora, Ill.
1156 W. River St., Elyria, Ohio
76 Platt Street, Hatboro, Penn.
751 So. Palm Ave., Alhambra, Calif.

If you write maker identify as IEN - 3976

BEARING . . Aluminum bronze welded to steel for slide construction

Source: OHIO KNIFE CO.
Dreman Ave. & B. & O. R. R., Dept. 9, Cincinnati 2, O.



Uses Ampco bronze

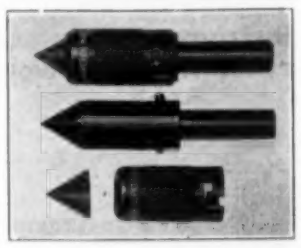
Wear is minimized on the slides, in equipment such as cam dies and trim dies, by application of this new bronze-steel wear plate. The soft steel back can be machined to fit a given job. The bronze face is finish ground.

Stock pieces range from 1½ to 8 in. in width and from ¾ to 1¼ in. in thickness. Length in each case is 72 inches. Special sizes and shapes can be made to order. The bronze is welded to the steel in permanent assembly.

If you write maker identify as IEN - 3977

GRINDING . . Abrasive cone and holder for work center finishing

Source: J. R. REICH MFG. CO.
43-47 E. Stroop Road, Dayton 9, Ohio



Corrosion proofed

Cent-R-Lap is a new tool consisting of a two-part holder and a cone-shaped abrasive cloth point. This point fits over the accurately ground holder body where it is held in place by a sleeve and bayonet lock. The tool is available with ⅜ and ¾-in. cone diameters. The cone element can be specified in various standard grits and is sold in 100 lots. A straight shank on the tool applies in a chuck in the center finishing machine.

If you write maker identify as IEN - 3978

VENTILATING . . Motor-driven blower circulates air in an equipment housing

Source: ELECTROFLOW PUMPS INC.
4809 Anaheim-Telegraph Rd., Los Angeles 22, Calif.

Bulletin on request

New assembly of variable-frequency, or 400-cycle, motor and centrifugal blower is designed to circulate air in enclosures containing electronic equipment. It is particularly suited for aircraft installation. Four sizes employ impellers measuring 1½ to 3 in. in diameter. The housing is made of Alkyd plastic reinforced with fiber glass. The blower will operate satisfactorily in a temperature range between minus 55 and plus 125 degrees Centigrade.

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If you write maker identify as IEN - 3979

Wear Defying
SILVER KING
INDUSTRIAL COUNTERS

Silver Kings challenge comparison! On casual examination, critical analysis, or the most exhaustive life tests they come out miles ahead.

Built rugged as an army tank, they operate smooth as a watch. Extra heavy shaft, oversize bearings, life-tested parts, light weight number wheels, tamper-proof reset, all-steel housings, chrome-plated finish—you can install Silver Kings with assurance of maximum dependability, longest life, lowest upkeep cost.

Available in Stroke and Revolution types, 5- or 6-digits, right or left shaft, knob or key reset.

Ask your PIC Representative to show you a Silver King or write us.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 3980

BROWNHOIST BUILDS BETTER BUCKETS
—for less money
DIRECT FROM FACTORY TO YOU

ROPE-REEVE, POWER WHEEL AND LINK TYPE
Write for illustrated catalogue
INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

If you write maker identify as IEN - 3981

FIGHT FIRES with ROCKWOOD *TRIPLE-ACTION* WATERFOG NOZZLES

Illustrated, Rockwood WaterFOG Nozzle Type SG-48.

With a Rockwood Nozzle you can pick your discharge pattern. Its triple action gives you conventional straight stream, high velocity WaterFOG or low velocity WaterFOG. You get quicker quenching of fires because the Rockwood nozzle goes into action faster . . . . there's more protection to life and nearby combustibles . . . and there's less water damage because less water is used. Write for booklet, "15 Types of Fire Protection," to get the newest information in fire protection.

Tested by Underwriters' Laboratories, Inc., and approved by Factory Mutual Laboratories.

ROCKWOOD SPRINKLER CO.
Engineers Water . . . to Cut Fire Losses
40 HARLOW STREET, WORCESTER 5, MASS.

If you write maker identify as IEN - 3982

Viking
• THE ORIGINAL COMPOUND SHEAR

APPLIES THE STRENGTH OF *20* MEN AT THE BLADE

Cuts without kinking as easily as a tailor's shears thru cloth.
- Cuts Band Iron
- ¼" Brass (any width)
- Copper, Sheet Iron Tin, Band Saws (any thickness or width)
- 12 Gauge Bessemer Steel

OVERALL LENGTH 34" · WEIGHT 22 LBS.
IMMEDIATE DELIVERY $29.00

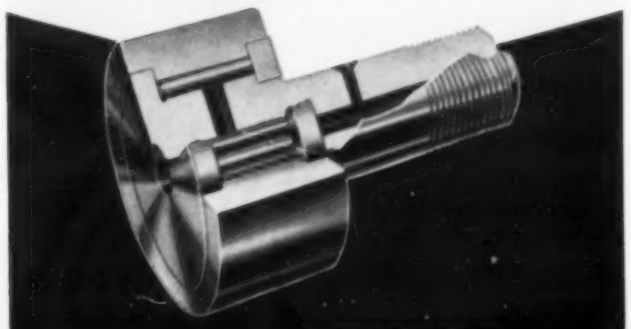
VIKING SHEAR COMPANY
1065 W. 20th ST. • ERIE, PA.

If you write maker identify as **IEN - 3983**

Improve Performance

of cam action with MULTIROL®

Cam Follower Bearings



Multirol CF Series Bearings are designed especially to insure greater precision performance in any cam actioned bearing application. They are built to provide the ultimate in radial capacity, shock resistance, space economy and longer bearing life.

Send for McGill Catalog No. 52

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso, Indiana

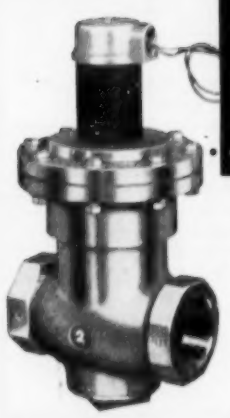
If you write maker identify as **IEN - 3984**

SAVE WATER

ON COOLING OPERATIONS

with

Atkomatic SOLENOID ELECTRIC VALVES



Through remote or automatic control, water used to cool compressors, motors, degreasers, etc., can be saved. Atkomatic Solenoid Electric Valves connected to starting switches permits water to flow only when equipment is in use. Avoids wasteful loss totaling thousands of gallons each month . . . saves thousands of dollars per year in large plants. Reduce overhead by saving water. Lower operating costs with Atkomatic Solenoid Electric Valves.

Write for more complete information

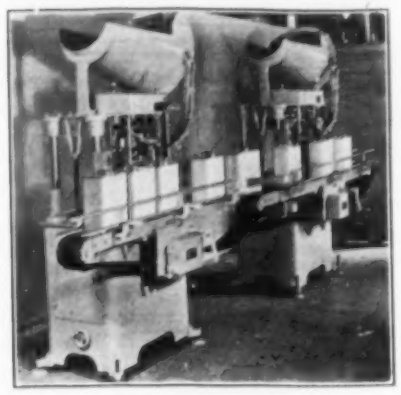
ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as **IEN - 3985**

If you write maker identify as **IEN - 3986**

PACKAGING . . Automatic machine to cap and seal filled containers

Source: U-PRESSIT PRODUCTS INC.
420 Lexington Ave., 6th Floor, New York 17, N. Y.



Available to order

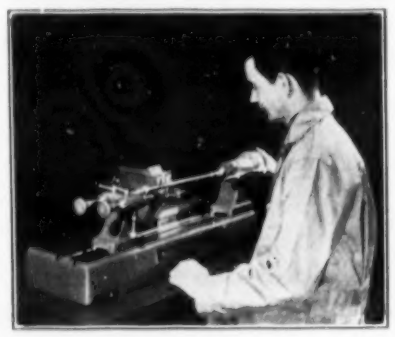
Twenty to sixty pint or quart containers or 20 to 25 one and two-gal. containers can be capped and sealed per minute by this new combination automatic machine. In the first stage the machine applies the patented U-Pressit push type cap. In the second station it applies and crimps a tamper proof band that can be removed only by tearing.

The metal cap is released by applying finger pressure at its center. It is replaced to grip the sides of the container opening by pressing its sides down and inward. The caps can be printed with instructions for opening and closing or with a company's symbol or trade mark. The machine shown lists at about $7,000.

If you write maker identify as **IEN - 3987**

GAGE . . Micrometer instrument indicates accuracy of threaded work

Source: SHEFFIELD CORP.
719-23 Springfield Ave., Dayton 1, Ohio



Operator watches indicator

New instrument mounts a fixed headstock and an adjustable tailstock with a longitudinal carriage on a cast iron base. Work can be accommodated to 18 in. in length by 8 in. in diameter. A micrometer screw has a working travel of 2 inches. The main carriage rides on balls on hardened and ground ways. It supports a specially constructed totally enclosed micrometer nut and a second carriage that mounts the amplifying and indicating unit with its 400 to 1 magnification.

The machine is available with an attachment to measure the lead of taper threads. This attachment employs a centrally pivoted sine bar. It is set by turning a knurled screw against a graduated scale.

Identify as **IEN - 3988**

You can convert bevel seated sanitary pipe fittings to stepped gasketed fittings by means of a hand or motor driven seating machine developed by Tri-Clover Machine Company. The fittings are clamped in the machine and a tool spindle is rotated to cut the new seat. A precision molded Hycar gasket completes the job of sealing the fitting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3989**

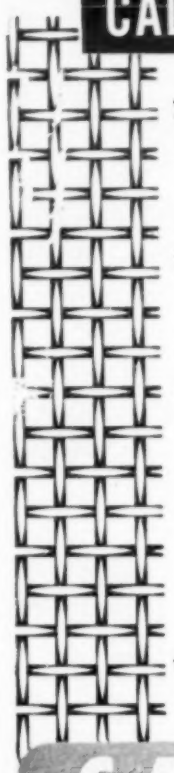
MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as **IEN - 3990**

CAL-WIC WIRE CLOTH



THE RIGHT WEAVE

• • • for every industrial requirement including screening, filtering, grading, cleaning and numerous other types of processing.

THE RIGHT WEIGHT

• • • precision-fabricated for long-lasting dependability and economy.

THE RIGHT METAL

• • • for highest resistance to chemical action, moisture, corrosion, abrasion and extremes of temperature.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC INDUSTRIAL SCREENS CFI
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 3991**

IMMEDIATE SHIPMENT

•

STYLE 600 STACKING BOX

ALL PRICES F.O.B. FACTORY PHILADELPHIA

COMPLETE CATALOG ON REQUEST

An ideal all-purpose shop box with rigid handle and hook hole each end. Sturdy alllwelded construction. Heavy skids act as positive stacking lock and reinforce box at point of maximum wear. Will stack with style 500 stacking bin of same length and width. Other styles and sizes available.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
601-18	10"	16"	6"	18	$1.55	$1.71
602-16	12"	18"	8"	16	$2.29	$2.58
603-18	12"	18"	6"	18	$1.84	$2.05
603-16	12"	18"	6"	16	$2.11	$2.35

PHONE • WIRE • WRITE
BAldwin 9-1805

BAY METAL PRODUCTS
3011 N. 16th St. • Philadelphia 32, Pa.

If you write maker identify as **IEN - 3992**

ONE MAN AND A Lincoln AUTO-SCRUBBER
CLEANS MORE FLOOR SPACE THAN AN ENTIRE CREW OF SCRUBBERS AND MOPPERS!

Above: floor cleaning at well known manufacturer of office appliances with a Lincoln 500 AUTO SCRUBBER that cleans floors better in one-tenth the time at one-fourth the previous cost.

Write DEPT. 4-53 for details.

$AVE UP TO 75% ON FLOOR SCRUBBING!

★ Without cost or any obligation whatever, our local floor maintenance specialist in your territory will survey your present methods and submit specific recommendations to insure substantial savings.

There is a recommended LINCOLN for every floor cleaning operation. Ask for a FREE Demonstration

The LINCOLN FLOOR SCRUBBER AND POLISHER

Lincoln-Schlueter FLOOR MACHINERY COMPANY
1358 WEST VAN BUREN ST., CHICAGO 7, ILLINOIS
MORE THAN 55 YEARS OF SERVICE

World's Manufacturer of the Most Complete Line of Floor Maintenance Equipment

If you write maker identify as IEN - 3993

TOLEDO®
PARCEL POST SCALES

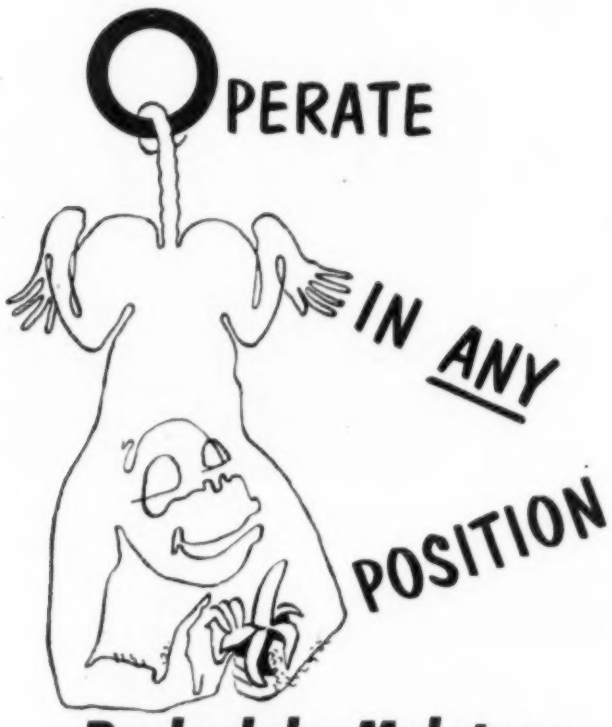
Model 3659—Full capacity parcel post and express scale. Computes for all zones.

Control Postage Costs!

Save time . . . stop excess postage costs . . . avoid ill-will of "postage due" . . . with the speed and dependable accuracy of Toledo Scales! Choice of 11 models for mailing and parcel post . . . each with automatic Toledo indication of correct postage. Write for bulletin 3047-B. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO
HEADQUARTERS FOR SCALES

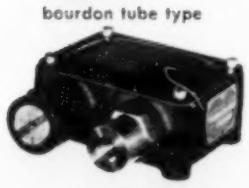
If you write maker identify as IEN - 3994



Barksdale-Meletron PRESSURE SWITCHES

diaphragm type

bourdon tube type



piston type

have extreme repetitive accuracy, are not affected by vibration. Explosion-proof models available.

Diaphragm type sensing elements for vacuum and low pressure (to 120 psi), bourdon tube type for high pressure (to 12,000 psi), and piston type for high cycling rate (to 15,000 psi).

Wherever a Vacuum or Pressure change must initiate electrical action there is a Meletron or Barksdale Pressure Switch to perform that function.

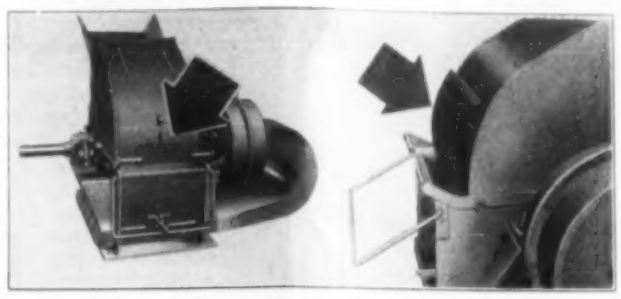
For complete technical information see our catalog in Sweet's 1953 File for Product Designers and in the Plant Engineer's File, or write for catalog 2M-S.

BARKSDALE VALVES
1566 E. SLAUSON AVE., LOS ANGELES 11, CALIF.

If you write maker identify as IEN - 3996

PULVERIZING . . Hammer mill permits screen change while operating

Source: SCHUTTE PULVERIZER CO.
25-29 Clyde Ave., Buffalo 15, N. Y.



A guard protects the operator

New design of the company's line of hammer mills is featured by provision for quick screen removal and replacement for varying product requirements. The change is made after lifting a latch, swinging a clamp handle and lowering a guard door. Then the screen is exposed for removal so another can be slipped into place. It is not necessary to stop the machine to make the change.

Six sizes in the line rate 20 to 75 hp. minimum, 30 to 125 hp. maximum. Floor space is 37 by 60 by 80 inches. Height is 44 inches. Each machine employs the Schutte adjustable hammers and the Power Saver centrifugal blower. The mill housing is made of steel in welded assembly. The blower housing is cast iron with a steel liner. The shaft rides in self-aligning ball bearings in dust-proof housings.

If you write maker identify as IEN - 3997

CONTROL . . Pneumatic transmitter actuates remote indicator, controller

Source: BRISTOL CO.
Griggs & Kelsey Sts., Waterbury 20, Conn.

Locates anywhere

Series 650 designates a new combination of sensing and measuring element and pneumatic transmitter. Changing conditions in a variable, such as vacuum, pressure, temperature, can be measured and converted into air pressure in a proportional range between 3 and 15 lb. per square inch. This pressure can be carried through small lines to actuate receiving instruments, at distances to 1,000 ft., for indicating, recording and controlling. The transmitter, with its sensing element, locates at the point of process control for non-lag action. It permits positioning the instruments that perform the controlling functions in any convenient location.

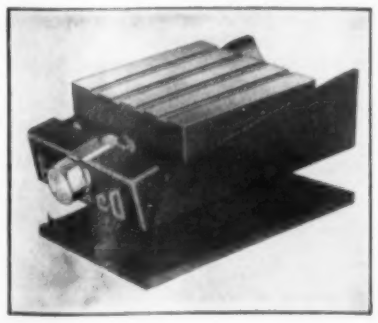
A selection of ranges is available in the line from 0 to 5 in. of water to 10,000 lb. per sq. in., from 0 to 5 in. of water to full vacuum, from minus 100 to plus 1,000 deg. F., from 0 to 2 to 500 in. of differential water pressure. In each case the transmitted range is 3 to 15 lb. per sq. in. of air pressure to the remote instruments. A characteristic is sensitivity to extremely small changes in the measured variable. This can be as small as 0.03 per cent of range, including reversal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3998

A PAID NEWS ADVERTISEMENT BY ENTERPRISE MACHINE PARTS CORP.

Improved Machine Leveling Jack is 50% stronger yet lower in height



Engineering improvements have made this Jack 50% stronger yet lower in height. This was accomplished by redesigning the Empco Jack so that the adjusting screw always remains cradled in the assembly. This insures full bearing of either front or back collar at any stage of operation.

Once the machine is set on Empco Jacks, the simple turning of adjusting screw with a hand wrench will lower or raise the machine until your level indicator reads "zero." With this feature, periodic machine leveling can be done in a matter of minutes.

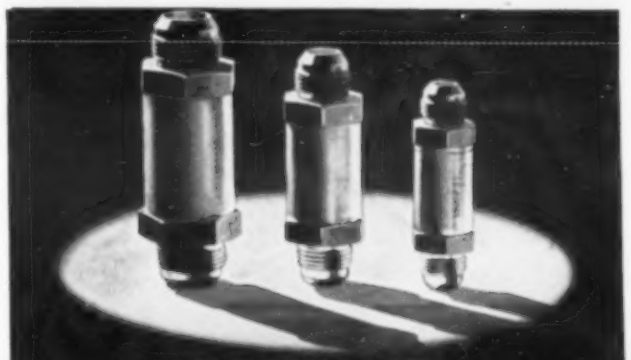
To reduce vibration, Vi-Sorb Mounting Pads are available with each style Empco Jack. These pads substantially reduce vibration, the percentage of reduction usually depends upon the thickness of the pad that is used.

Level machine installations with periodical re-leveling is essential to lower costs of machine maintenance. These costs are further reduced by the use of Vi-Sorb Mounting pads under every Empco Leveling Jack.

Available in three styles: JC-1 (standard) and JC-2 (heavy duty) pictured here, and the newest style JS particularly designed for use with anchor bolts. Many models in all styles with minimum height ranging from 1⅞" to 4".

For complete specifications and prices write the Enterprise Machine Parts Corporation, 2737 Jerome Ave., Detroit 12, Michigan.

If you write maker identify as IEN - 3999



KOHLER
PRECISION CONTROLS
Aircraft-Industrial-Automotive

Kohler Co. is a leading supplier of precision controls to manufacturers of jet engines, military, commercial and private aircraft, agricultural and industrial test equipment, Diesel engines, automobiles, trucks, and tractors.

Our engineers develop, for volume production, valves, fittings and kindred equipment to specification. Write for catalog.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 4000

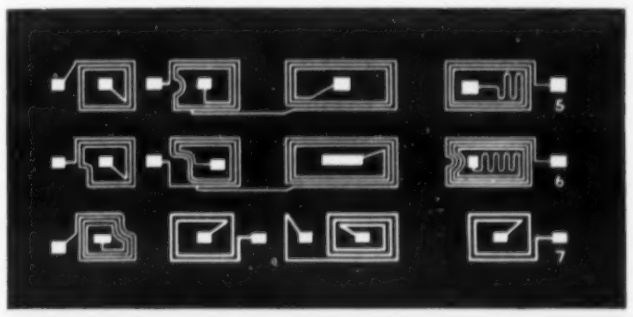
Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.
6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT
CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 4001



FOIL Your Circuit Troubles

. . . and Synthane laminated plastics with copper-foil on one or both sides, is one good way to do so. "Printing" circuits speeds up your operation . . . saves space . . . reduces the possibility of error. Synthane has pioneered in the production of copper clad laminates. Synthane laminated plastics with copper foil have good insulation resistance and are easy to punch or machine. We can supply foil-laminated Synthane in the grade and thickness you need . . . and in the quantity you require. Get complete information on copper-foil Synthane and its place in electronics. Use the coupon today.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

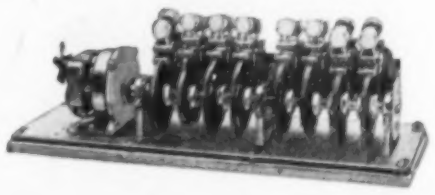
Gentlemen:
Please send me information on Synthane laminated plastics and its use in "printed" circuits.

Name _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 4002

Control Your Sequence Operations Automatically

this far better way



STALEY TIME CYCLE CONTROLLERS

Start and stop motors, open and close relays, valves, etc. automatically in any predetermined cycle of time interval. Adjustable cams operate dependable Staley Metallic Mercury Switches for fully enclosed make and break. Standard, interchangeable parts and accessories provide wide range of adaptability in varying from 1 to 110 circuits. Reliability and long life proved in hundreds of installations.

Example — A two-circuit Staley Time Cycle Controller, used in reversing current several times a minute in a plating bath, has been operating 24 hours a day, 7 days a week for the past 5 years.

If you do things automatically, send for our helpful Bulletin No. 405.

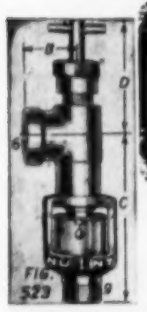
ELECTRIC SWITCH CORPORATION
1302 E. Eleventh Street, Columbus, Indiana

If you write maker identify as IEN - 4003

NUGENT SIGHT FEED VALVES

for pressure or gravity oil systems

A model to suit every need



▲ 13 models designed for working pressures to 125 psi. Sizes to ¾ inch.

Medium size needle type with steel valve stem. 9 Models. Sizes to ¾ inch. ▶

9 models for larger machinery. "Swivel and lock" type for sight chamber adjustment to most convenient view position. ▶

Oil flows from 2 drops per minute to 21 U. S. gals. per hour depending on valve model and oil viscosity. All are vented to prevent air binding. Glasses and screens are removable for cleaning without need of oil flow interruption. Write for full details on complete Nugent Sight Feed Valve line.

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as IEN - 4004

#1 buy... ARMORPLY

for 3-way savings

. . . SAVES YOU TIME. Armorply is *made to your order.* You get the exact size you need to eliminate cutting and fitting on the job. You speed up production.

. . . SAVES YOU TROUBLE. Armorply is *finished to your order.* You can get a variety of surfacing metals and finishes (bonded firmly to Weldwood® Exterior Plywood). You eliminate special finishing steps. (And you get strength greater than either wood or metal alone provides.)

. . . SAVES YOU TROUBLE. Order Armorply for what you make: truck bodies, refrigerators, elevator cabs, tote boxes . . . or whatever. And see how easy it is to make better products, at lower overall costs, with better profits, simply by using Armorply. *Mail this coupon today.*

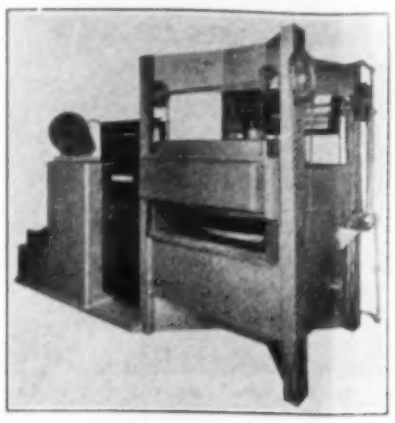
UNITED STATES PLYWOOD CORPORATION IEN-4-53
World's Largest Plywood Organization
55 West 44th Street, New York 36, N. Y.

We are interested in Armorply for _____
Please send a free sample and data.
Name _____
Address _____
City _____ State _____

If you write maker identify as IEN - 4005

HEAT TREATING . . Gas fired furnace with ram and work flattening plates

Source: WALTZ FURNACE CO.
1903 Symmes St., Dept. 6, Cincinnati 6, Ohio



For specified use

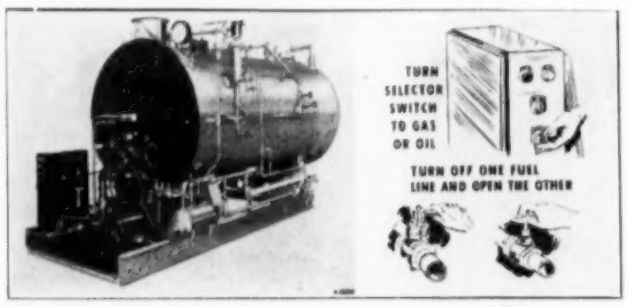
The work chamber in this new furnace is equipped with two 42-in. circular cast iron plates between which thin work such as a circular saw is inserted to be tempered and flattened. The bottom plate rests upon the steel structure of the furnace but is not fastened to it. The top plate is suspended from the piston rod operating in a hydraulic **power cylinder** mounted on the furnace top. Doors are provided at the front and rear for access to the work.

Gas burner equipment fires into a combustion chamber on the inlet side of a recirculating blower. Hot gases are carried into the furnace chamber and out again for a temperature range between 350 and 1,000 deg. F. Temperature is controlled and the flattening plates are brought down to hold the work at controls mounted on a panel at the left of the furnace.

If you write maker identify as IEN - 4006

BOILER . . Self-contained to 500 hp., changes quickly between oil and gas

Source: CLEAVER-BROOKS CO.
324-28 E. Keefe Ave., Milwaukee 12, Wis.



Change requires about ten seconds

Two valves and a circuit-selector switch are operated, in this recently improved assembly, to change from oil to gas firing or back to oil. No mechanical or electrical change is required in the installation. The boiler itself is the company's standard four-pass fire tube design. It is available in ratings to 500 hp. to provide power and process steam.

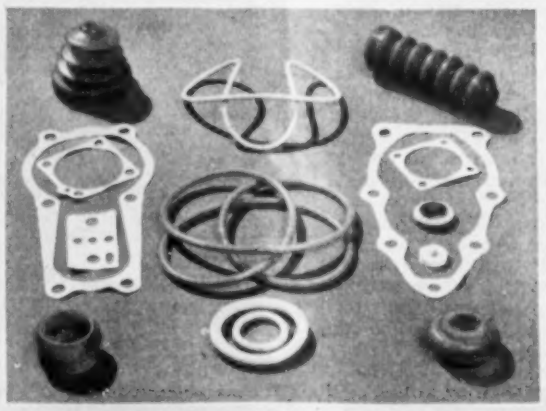
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Reviews of new product literature start on page 78 this issue

If you write maker identify as IEN - 4007

SILICONE RUBBER MOLDED PARTS

With new compounds being developed almost weekly, Silicone rubber molded parts are performing faultlessly in many critical applications where Silicone of less than a year ago could not meet the severe service requirements.



Remaining resilient at extreme temperatures (—100° to +500°F) today's Silicone stocks have greatly increased tensile strength and far lower compression set. They withstand many oils and chemicals, resist prolonged weathering, fungus growth, oxidation and ozone, have excellent dielectric properties and water repellency. They bond well to metal, and are stainless and odorless.

Send for Acushnet Rubber Handbook, a comprehensive data reference.

Acushnet PROCESS COMPANY

Address Correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 4008

S-W Belt Saver Pulleys

SINCE 1866

. . . Protect Expensive Belts

For rough service installations . . . for the handling of hard, abrasive materials—always specify the S-W 'BELT-SAVER'.

Its special wing and cone design and its self-cleaning action assure longer belt-life and reduced maintenance costs.

The 'BELT-SAVER' pulley is exclusive with Sprout-Waldron, along with a complete line of standard and special cast iron pulleys.

Write for Bulletin 35-A today! Sprout-Waldron & Co., 5 Logan St., Muncy, Pa.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

198

SPROUT-WALDRON

If you write maker identify as IEN - 4009

ONE MILLION RELAYS

Over 1000 Types

24 HOUR DELIVERY FROM OUR STOCK!

- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

Write for New 16 Page Catalog

Send us your relay requirements. You will receive immediate quotations.

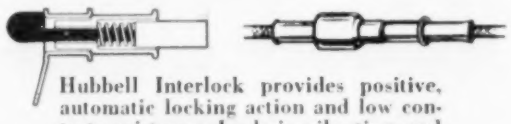
samples on request. *Phone, Wire or Write*

Relay Sales
SEeley 8-4146
4721 W. MADISON STREET
DEPT. NO. 9 CHICAGO 44, ILLINOIS

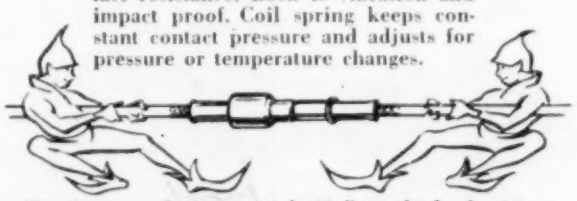
If you write maker identify as IEN - 4010

Introducing the NEW HUBBELL Interlock

SELF-LOCKING ELECTRICAL CONNECTORS
They Never Disconnect Accidentally!



Hubbell Interlock provides positive, automatic locking action and low contact resistance. Lock is vibration and impact proof. Coil spring keeps constant contact pressure and adjusts for pressure or temperature changes.



Here's a revolutionary "plug-in" method of wiring that can be adapted for a multiplicity of uses in the electrical field. Wire connections are made more quickly . . . easily — and they stay locked — yet the Hubbell Interlock is easy to disconnect when desired. Available with rubber insulating covers.

Our development laboratory will cooperate with your engineers to adapt INTERLOCK to your application . . . write

HARVEY HUBBELL, INC.
Interlock Dept. Bridgeport 2, Conn.

If you write maker identify as IEN-4011

UTMOST PROTECTION *at Lowest Cost*

To the cost-conscious operators of industrial plants Manzel Feeders pay dividends in accuracy, dependability, and *surprising* economy of purchase and maintenance. Built by an organization famous for fifty years in the manufacture of automatic force feeding equipment, Manzel design is *thoroughly* proven. Whatever your feeding problem, ask Manzel.

MULTI-FEED CHEMICAL FEEDERS... *Any number of pumping units can feed the same or different chemicals simultaneously.*

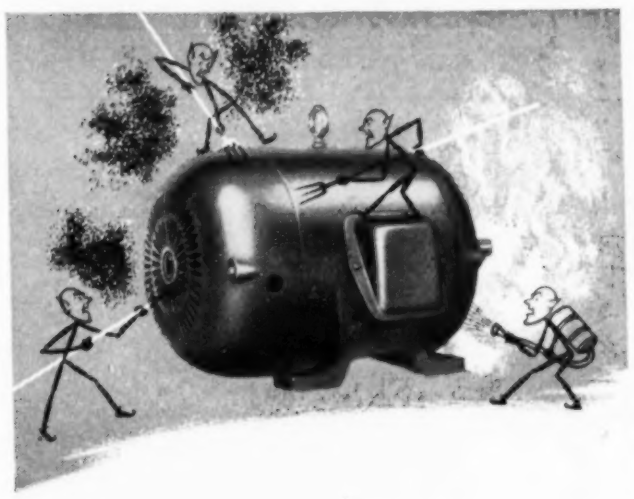
LARGE OR SMALL CAPACITIES... *Various models pump from a fraction of a drop to 60 gph. All types of drives available.*

MANZEL HYPOCHLORINATORS... *Positive, precise, and* low cost. *Easy to install and service.*

Manzel

242 Babcock Street, Buffalo 10, New York

If you write maker identify as IEN-4012



Dust, Grit, Fog or Fumes CAN'T GET UNDER THE "SKIN"

OF YOUR Century

TOTALLY ENCLOSED FAN COOLED MOTORS

With vital working parts tightly sealed against destructive air-borne hazards, you can count on Century TEFC motors for dependable service in any kind of atmosphere. Air is circulated between the inner and outer frames to keep the motor safely cool at rated loads.

Whatever your motor requirements, it's easy to select the motor that is best for the job from Century's wide line of types, sizes and operating characteristics: ⅛ to 400 horsepower, A.C. or D.C., Drip Proof, Splash Proof, Dust Proof and Explosion Proof.

Specify Century on new equipment or for replacement. Your nearby Century Sales Office or Century Distributor will be glad to give you complete information.

CENTURY ELECTRIC COMPANY

Century C MOTORS

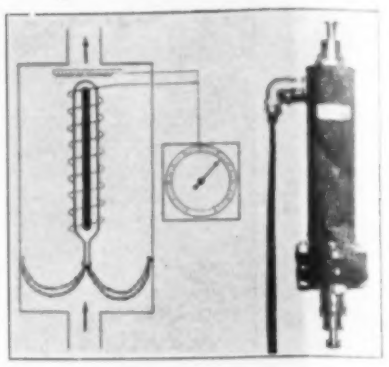
1806 Pine Street
St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

786

If you write maker identify as IEN-4014

TESTING . . Density indicator, continuous reading in moving liquid

Source: PRECISION THERMOMETER & INSTRUMENT CO.
1400 Brandywine St., Dept 7, Philadelphia 30, Pa.



Ask for Bulletin W-3

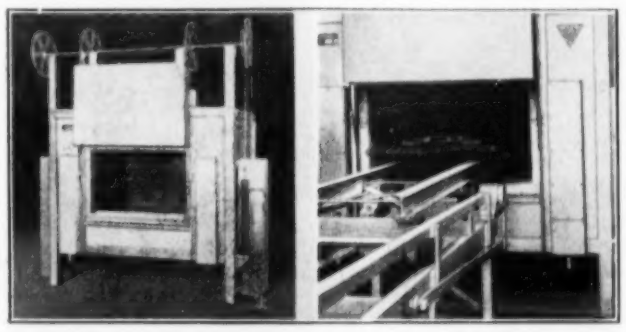
Pressure is now to 500 lb. for the company's Densitrol equipment. It was limited to 125 lb. in the design previously described IEN-3388-51. Temperature limit is now 500 deg. C. as compared to the previous 300 degrees. Assemblies are available in the present line for pilot plant and pipe line application and for remote indication and control as well as for direct indication at the point of instrument installation.

The operating element is a totally submerged plummet, fastened by a chain of known weight to a fixed reference point. The plummet assumes an equilibrium position for each density within the range of the plummet-chain assembly. Any changes in the plummet position are translated through the plummet core and the electrical coil type position measuring circuit into a continuous indication that can be employed also to record or control the liquid density. Friction is not a factor. Vibration does not affect the operation. Accuracy is within 3 per cent of range or 0.0002 density, whichever is greater. Sensitivity is within 0.5 per cent of all ranges.

If you write maker identify as IEN-4015

HEATING . . Electric furnace, operating temperature to 2,400 deg. F.

Source: PERENY EQUIPMENT CO.
891-5 Chambers Road, Columbus 12, Ohio



Particularly for large heavy work

The work chamber in this new electric furnace measures 36 by 48 by 24 inches. Overall dimensions are 77 by 71 by 80 inches. Heat is supplied by Globar elements. Power input is controlled through a 60-kva. transformer with 36 current taps. A direct reading power meter is included. Current supply is through a Size 5 magnetic contactor.

The furnace is suited for heat treating, porcelain enameling. Its hearth can be either solid silicon carbide tile or triangular rails. Various types of work handling equipment are available. The door is counterbalanced and operated by a foot controlled air cylinder. It closes tight.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

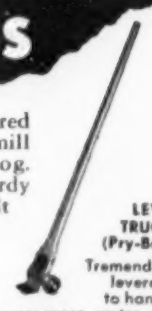
If you write maker identify as IEN-4016

Special TYPES ARE STANDARD at Fairbanks

HAND TRUCKS of special design required for many industries are run-of-the-mill stock items in the Fairbanks catalog. There's a type for every need . . . of sturdy design, high grade materials . . . and built to last. Here are some typical examples. If you don't see what YOU need — ask for it.

Fig. 500. JACK and PLATFORM TRUCK

Efficient, low cost lift jack and platform system increases production, cuts costs. Many standard platform sizes available; special sizes to order.



LEVER TRUCKS (Pry-Bars)

Tremendous leverage to handle heavy cases, crates, machines, etc. Raises, loads 9 in. from the floor, 5, 6 and 7-foot lengths.

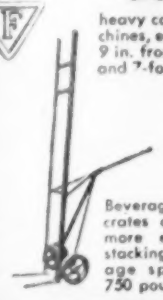


Fig. CC-10 TIER TRUCK

Beverages, cartons and crates can be handled more efficiently. High stacking cuts down storage space. Capacity 750 pounds.

THE Fairbanks COMPANY
General Offices: 393 LAFAYETTE STREET, NEW YORK 3, N. Y.
Branches: New York 3, Boston 10, Pittsburgh 22, Rome, Ga.

VALVES · DARTS & PIC UNIONS · TRUCKS · CASTERS

If you write maker identify as IEN-4017

3 VALUES!

★ One Piece Construction
★ Wide Wire Range
★ Economically Priced

BLACKBURN *Hi-Strength* TERMINAL LUGS

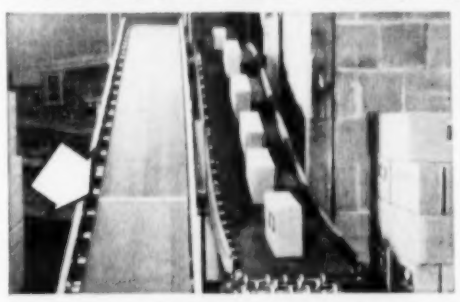
Strongly constructed—all in one piece—yet small and compact, to fit in tight quarters. UL approved. Only 6 sizes cover a range from No. 14 to 1,000,000 CM. Specify Blackburn and get a quality lug in the low price field.

JASPER BLACKBURN CORP.
35 Madison St., St. Louis 6, Mo., CEntral 3007

If you write maker identify as IEN-4018

ALLIGATOR

CONVEYOR BELT LACING



*Every Tooth A Vise**

in Long Continuous Lengths for Conveyor Belts . . . . .

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Stainless or Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and *any width.*

Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

If you write maker identify as IEN-4019

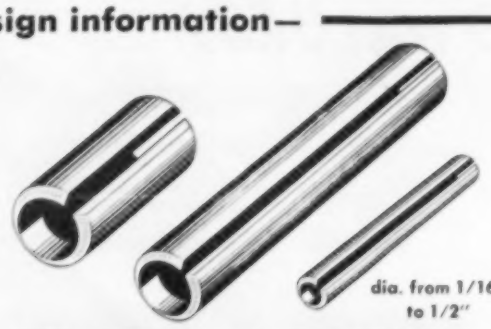
A Platecoil has more heat transfer area than a pipe coil twice its size. Thus it takes only half as much Platecoil to heat a given area. You have 50% less steel to pay for so you can save nearly 50% in initial cost. The Platecoil takes only half as much space in the tank. The greater BTU transfer per unit area of Platecoil also means faster heating or cooling. Platecoils require less maintenance and can be removed without dumping the solution.

Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 4020

Design information—



ROLLPIN

. . . the slotted tubular steel pin with chamfered ends

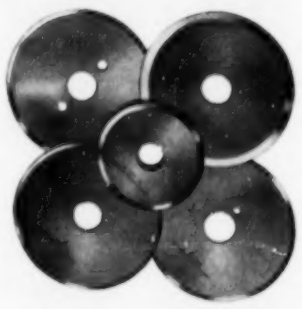
- Easily driven into holes drilled to normal production tolerances
- Self-locking . . . exerts constant pressure against hole walls
- Easily removed with drift or pin punch
- Fits flush . . . is reusable

Offers assembly-time savings over rivets, set screws, straight, serrated or cotter pins, dowels, hinge pins and many others.

WRITE for detailed catalog—Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, N. J. Address Dept. R18-453.

If you write maker identify as IEN - 4021

Continental CUT-OFF WHEELS CUT MORE PIPE PROFITABLY



These Wheels Feature Continental's Exclusive "True-Angle Bevel"

For faster, cleaner cuts — and more cuts between sharpenings. For all makes of rotary cut-off machines. *Also, Manufacturers of Cut-Off Machines . . Chaser and Wheel Grinders.*

Request Circular Today

Continental MACHINE CO.
SINCE 1919
1952 N. MAUD AVE. • CHICAGO 14, ILL.

If you write maker identify as IEN - 4022

CHASE RED TYE Drawstring Bags

Ideal for mailing and storage of small parts and samples. Twin Mailers also available, with envelope for letter and strong cotton bag for part or sample. Sizes available for every need! For information on CHASE Red Tye Bags, mail coupon.

CHASE BAG COMPANY
309 W. Jackson Blvd., Chicago 6, Ill.
Yes, I am interested in Chase Red Tye Drawstring Bags. Please send details.

Name.....
Street Address.....
City.....*State*.....
Type of Business.....

SINCE 1847

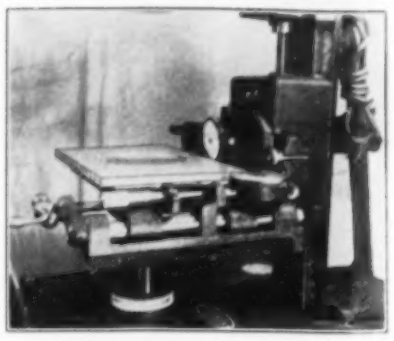
CHASE BAG COMPANY

GENERAL SALES OFFICES: 309 W. JACKSON BLVD., CHICAGO 6, ILL.
20 BRANCHES AND SALES OFFICES STRATEGICALLY LOCATED

If you write maker identify as IEN - 4023

GAGE . . Coordinate stage positions work on optical comparator

Source: PORTMAN INSTRUMENT CO.
10 Manhasset Ave., Port Washington, N. Y.



For exact positioning

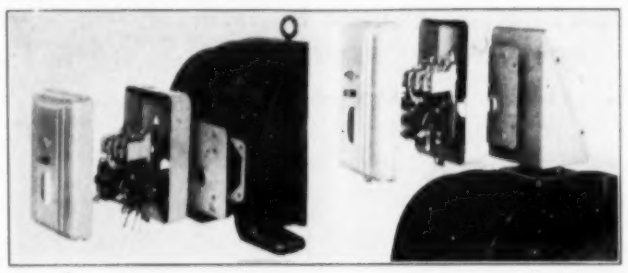
Dial indicators and micrometer spindles are provided for the longitudinal and traverse movements of this new coordinate stage. They permit setting it and work positioned upon it exactly in relation to the viewing screen on the company's Model C-100 optical comparator gage.

The stage is also adjustable for helix angle positioning to 10 deg. on either side of center. It is assembled so it can be swung away to change lens units from one magnification to another without disturbing the work set-up. Platform dimensions are 6 by 9¼ inches. The stage center carries a 4-in. removable glass insert disc. Travel movements are 1½ in. longitudinally and 1 in. in transverse direction for the new stage.

If you write maker identify as IEN - 4024

MOTOR CONTROL . . Mounting bracket applies company's starters on motor

Source: FURNAS ELECTRIC CO.
1008 McKee St., Batavia, Ill.



Illustrated details in Bulletin 5210

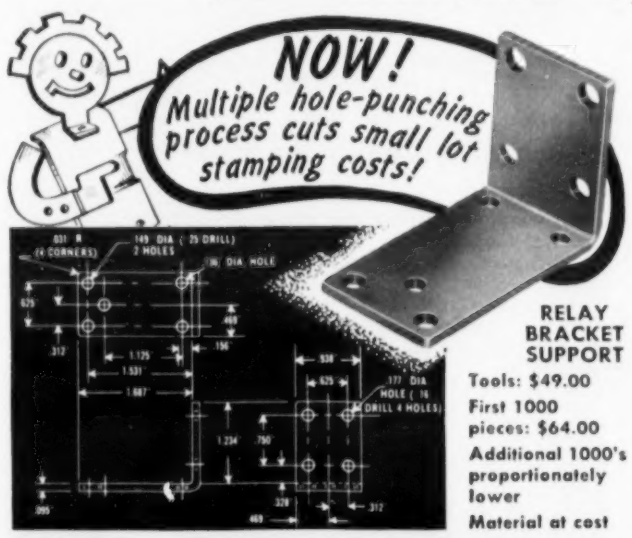
Two types of adapter and a change in the starter case design for the company's sizes YC, YD and YE magnetic starters and contactors permits application of the control equipment directly on a motor housing in any required position. The starter is available for this new application in sizes to 10 hp. on non-reversing service and 220 to 550-volt polyphase input. It is available in sizes to 7½ hp. at 220 volts or 10 hp. at 440 or 550 volts in polyphase circuits for reversing service. The mounting brackets list at $1.70 to $4.85.

Identify as IEN - 4025

The effect of diameter variation, in work being checked with an air gage, is eliminated in the Taft-Peirce computing indicator. As a result it is possible to read angle of work taper, concentricity, clearance on single dials without need to make any computations. The company will show you how the gage can be applied in your production lines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4026



RELAY BRACKET SUPPORT
Tools: $49.00
First 1000 pieces: $64.00
Additional 1000's proportionately lower
Material at cost

FREE...

Write for sample with cost summary and Bulletins 101 and 161 giving the complete Federal stamping story.

9 holes—2 different diameters—*punched simultaneously using Federal's new multiple hole-punching process!*

PRECISION die cut stampings in short runs involving hole-punching can now be made at even lower piece prices with Federal Tool's new multiple hole-punching process. Savings in press time and reduction in number of operations performed result in lower stamping costs. Before you buy . . . try Federal. Send your prints for lower cost quotations.

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as IEN - 4027

NEW 16-page CATALOG gives all the facts on the

REVOLUTIONARY Sier-Bath Flexible GEAR COUPLINGS

Illustrates These *Sier-Bath* Advantages:
- 3/5 Usual Size, 1/2 Usual Weight
- Assembled, Uncoupled in seconds!
- Slash assembly costs, down-time

Send for FREE COPY

Gives design explanation, advantages, application . . . complete technical data on all types . . . engineering information, etc. Standard types (below) sizes ⅞ to 6, HP 4 to 600 per 100 RPM. Special types, sizes to order. Ask your Distributor, Representative, or write us.

***Sier-Bath* GEAR and PUMP CO., Inc.**
9246 Hudson Blvd., North Bergen, N. J.
Established 1905 Member A.G.M.A.

Also manufacturers of Precision Gears, Screw and Gear Pumps

If you write maker identify as IEN - 4028

WHY GUESS THE TEMPERATURE . . . when you can see it!

Accurate Temperature at a Glance with the Simplified PYRO OPTICAL PYROMETER

Any operator can quickly determine temperature on minute spots, fast moving objects and smallest streams. Completely self-contained. No calibration charts or accessories needed. An accurate, direct reading Pyrometer that pays for itself by helping prevent spoilage. Weighs 3 lbs. Available in 5 temperature ranges, (1400°F to 7500°F). Ask for free Catalogue No. 85.

The Improved PYRO SURFACE PYROMETER

8 INSTRUMENTS IN ONE. Handles all surface temperature measuring jobs. Has selection of 8 types of thermocouples; all interchangeable in seconds wth no recalibration or adjustment. Automatic cold end compensator. Shock, moisture and dust proof. Accurate, big 4¾" indicator. Available in 5 temperature ranges. Ask for FREE Catalogue #168.

THE PYROMETER INSTRUMENT COMPANY
New Plant and Laboratory
Bergenfield 21, New Jersey
Manufacturers of Pyro Optical, Radiation Immersion and Surface Pyrometers for over 25 years.

If you write maker identify as IEN - 4029

• Benjamin "Vapolets" are recommended for all locations exposed to moisture and non-combustible dust, such as processing areas, loading docks, power plants, R.R. shops, cold storage plants, etc. Listed "Vapor-Proof" by UL.

Sealed lamp and wiring chambers; rugged aluminum guards; porcelain enameled steel reflectors (optional) assure long life without breakdown or frequent service.

FREE DATA BULLETIN
Benjamin Electric Mfg. Co.,
Dept. O, Des Plaines, Ill.

BENJAMIN "VAPOLETS"

6130

If you write maker identify as IEN - 4030

THE 3XP TYPE RAYONIC® CATHODE RAY TUBE By Waterman

The 3XP type RAYONIC CATHODE RAY TUBES have made possible more sensitive oscilloscopes with greater trace brilliance, without increasing present anode potentials. Waterman tube engineers pioneered a new approach to cathode ray tube design in developing this type tube. That research has paid off in a tube that provides a light output four times greater, and vertical sensitivity twice as great as comparable cathode ray tubes operating the similar anode potentials. All this has been accomplished without sacrificing low interelectrode capacities. These characteristics make the 3XP ideal for high frequency video work as well as low repetitive operation. Because of its unique shape and size, the 3XP lends itself readily to multi-tube oscilloscopy. The 3XP is available in P1, P2, P7, and P11 Phosphors.

OTHER WATERMAN RAYONIC TUBES INCLUDE:

3JP1 & 3JP7 JAN CR TUBES
3MP1, 2, 7, 11 CR TUBES
3SP1, 2, 7, 11 CR TUBES

WATERMAN PRODUCTS

SEND FOR COMPLETE DATA TODAY

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA. CABLE ADDRESS: POKETSCOPE

If you write maker identify as IEN - 4031

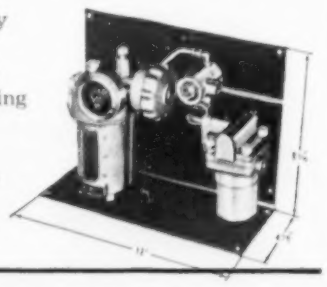
Steel-Maker...
extends bearing life 11 times!

ALEMITE OIL-MIST

Saves its cost each week-
eliminates lubrication down-time

Costly High-Speed Bearings Failed Week after Week on a key production machine. Costs piled up. The company turned to Alemite—installed an Oil-Mist unit costing little more than $100. *Result:* $220 saved first week. Today—11 weeks later—no signs of bearing wear; only three ounces of oil used per shift where a pound and a half of grease were required before!

Alemite Oil-Mist is a fully automatic system which atomizes oil into mist . . . distributes it through tubing to bearings . . . applies a constant uniform oil film to groups of bearings designed either for oil or grease lubrication.



delivers oil to bearings 3 ways

1. Oil-Mist as Such. For any type of anti-friction bearing—ball, roller or needle.

2. Oil in Spray Form. For open and enclosed gears and chains. Nozzle partially condenses mist so that it can be directed onto a concentrated area.

3. Oil-Mist Condensed. For plain bearings, slides, ways, vees, cams and rollers. In these applications, condensing fittings convert oil mist to liquid oil.

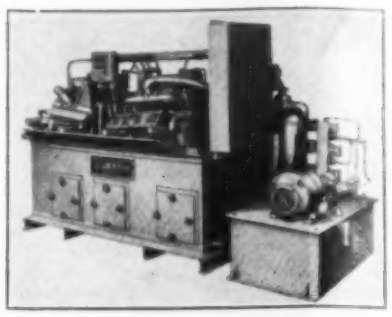
Get the facts NOW!

Let us send you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K-43, 1850 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as IEN - 4033

CLEANING . . Washing machine for semi-machined cylinder heads

Source: TURNER BROTHERS INC.
2623-27 Hilton Road, Ferndale 20, Mich.



Built to order

Sand and chips are flushed out of internal passages in semi-machined cylinder heads by means of this new machine. It mounts two work stations for alternate loading and unloading. It is actuated by limit switches and pushbuttons to circulate water under pressure from a motor-driven pump. The water flushes out any loose material. At the same time, it leak-tests the head.

If you write maker identify as IEN - 4034

FURNITURE . . Steel stand to handle tools and work at a machine

Source: INDUSTRIAL BENCH & EQUIPMENT MFG. CO.
98 South St., New Britain, Conn.

Color is green

New assembly of the company's steel stand, previously described IEN-1825-53, is made up of two steel trays and three drawers, the latter with individual locks. The trays and legs are made of ⅛-in. steel. The joints are electrically welded. The drawers measure 18 by 16 by 5 inches. Overall dimensions are 29 by 18 by 27 inches. The design shown is one of several in the line.

If you write maker identify as IEN - 4035

PROTECTING . . Coated fabric glove employs plastic on palm or all over

Source: GRANET CORP.
33-37 Mellen St., Framingham, Mass.

Comfortable to wear

Dynagluv trade names a new fabric glove coated with plastic for use by workers who do dirty jobs or handle harsh materials. The plastic is colored green. The glove is available in a knit wrist, a band top and a gauntlet style, either coated all over or only on the palms.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

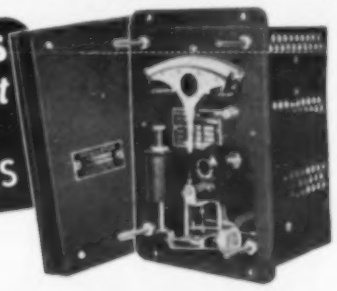
If you write maker identify as IEN - 4036

new...complete
FREE CATALOG
introduces
ILLINITE®
STANDARD CUTTING TOOLS

- Complete line illustrated
- Specifications and prices included
- Indexed for quick reference

GET YOUR COPY NOW
. . . from your ILLINITE distributor or write
ILLINOIS TOOL WORKS
2501 North Keeler Avenue • Chicago 39, Illinois

If you write maker identify as IEN - 4037



For VOLTAGE CONTROL of Small Alternating-Current Machines

ALLIS-CHALMERS Generator Voltage Regulators control voltage by automatically changing resistance in the exciter shunt field circuit. Only a small rocking movement of the contact sector over the curved commutator is required to cover the entire regulating range. Response is fast and accurate . . . sliding friction eliminated and wear minimized.

The V-00 regulator is used on ac generators with direct-connected exciters to 157 kva at 3600 rpm. Type 221 is used on ac machines with direct-connected exciters to 438 kva at 3600 rpm. These regulators can be modified for temperature compensation, shock mounting, or other special requirements.

Ask your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B6143A. A-3621

Rocking Contact is an Allis-Chalmers trademark.

ALLIS-CHALMERS

If you write maker identify as IEN - 4038

TOUGH GUY...

With Accurate Control

Masoneilan Air Reducing Valve

This accurate reducing valve is built to take it. Compact. Easy to service. Has large capacity . . . instant response. Its sturdy dependability and simple construction reduces maintenance to a minimum.

Initial pressure up to 250 lbs. reduced to any pressure from 5 - 60 lbs., 60 - 100 lbs. Sizes ¼" to ½". Pressure gauge included.

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN
REGULATOR CO.
1188 ADAMS ST., BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 4039

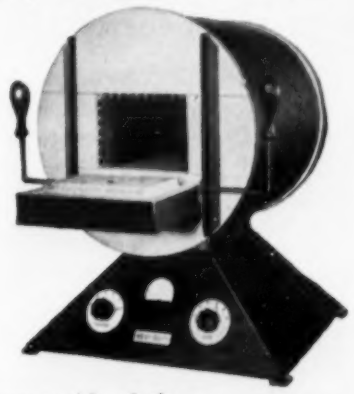
HEVI DUTY ELECTRIC COMPANY

"MULTIPLE UNIT"
MUFFLE FURNACE
With Many Advantages

For Temperatures to 1850° F.

FOUR STANDARD SIZES

Write for Bulletin LAB-849



★ Less Heat Loss — Improved Insulation and No Rheostats
★ Better Control Through a 36-Step Tap Changing Transformer in the Pyramidal Base
★ Pyrometer and Transformer Control Assembly in Easily Removed Base Drawer
★ Reversible "Multiple Unit" Heating Elements

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 4040

a Complete Line of
H.P. RATED VACUUM HEATING
PUMP CONTROL

Write for Bulletin 550, Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

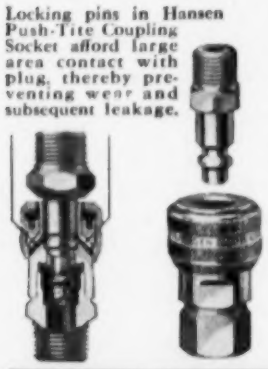
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 4041

HANSEN COUPLINGS
Give You 2 Big Advantages

Locking pins in Hansen Push-Tite Coupling Socket afford large area contact with plug, thereby preventing wear and subsequent leakage.



● To connect a Hansen coupling, you merely push the plug into the socket with one hand. Flow is instantaneous. To disconnect, push back sleeve on socket . . . coupling disconnects. Flow is shut off instantly and automatically.

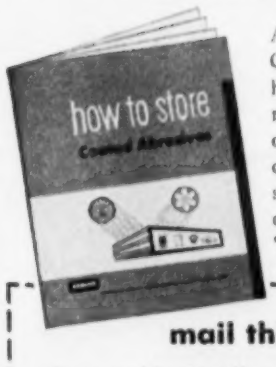
One-way shut-off, two-way shut-off, and straight-through types. Write for Catalog

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11 OHIO

If you write maker identify as IEN - 4042

Stop wasting money!

Protect your investment in coated abrasives



A new booklet from Armour's Coated Abrasives Division tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for free copy of "How to Store Coated Abrasives."

mail this coupon today

Please send booklet "How to Store Coated Abrasives."

Name _____

Company _____

Address _____

City _____ Zone ____ State _____

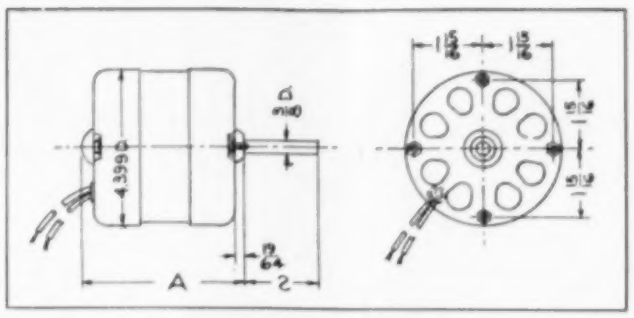
ARMOUR Coated Abrasives

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 4043

MOTOR . . Shaded pole design for fan drive, rates 0.04 to 0.10 hp.

Source: ELECTRIC MOTOR CORP.
State & Marquette Sts., Racine, Wis.



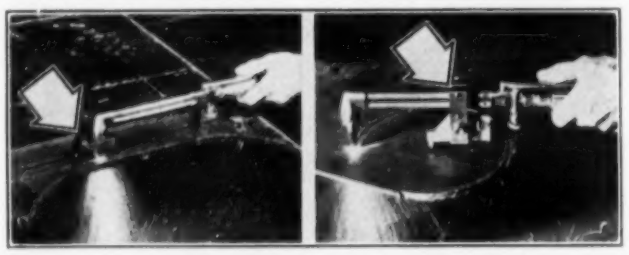
In quantity production

Three sizes, based on 1, 1½ and 2-in. lamination stacks, are available in the company's new No. 4400 shaded pole motor. It is designed for operation on 110-volt ac. with free speed at 1,750 rpm. and full load speed at 1,400 rpm. Stalled current ranges from 1½ to 4½ amperes. Stalled torque is 8 to 25 ounce-inches. Temperature rise, with fan delivery away from the motor, is 55 deg. C. in the standard unit.

If you write maker identify as IEN - 4044

CUTTING . . Acetylene torch guides for straight lines, shapes, circles

Source: NEW ERA ENGINEERING CO.
456 W. 29th St., Dept. G-43, Chicago 16, Ill.



No need for operator skill

Cutting torch is secured in a fitting that forms part of the assembly of these new guides so it is held securely and the operator's attention can be concentrated on movement to make a clean cut. One of two guide designs provides for straight line cutting and can be set to cut square, at 60 or at 45 degrees. A second guide provides for small circles of 1 to 15 in. in diameter. A larger circle guide increases this range from 10 to 66 inches. The guides are available singly or in kits to handle a range of work.

Identify as IEN - 4045

Clipper Manufacturing Company notes a new approach by one of its customers to application of its abrasive disc concrete cutting machine. Instead of using the machine to cut completely through a concrete floor to remove a damaged area or provide a trench, the machine is set to cut about a quarter of the way through. Then pneumatic tools are employed to break out the area to be removed. The cut leaves a clean edge all around.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4046

DRAFTED TO SPEED PRODUCTION

Look for UNIVERSAL DRAFTING MACHINE'S famous feature—the 360° Full-Vision Protractor

Harried engineering staffs in thousands of plants are using Universal Drafting Machines and Duraline Scales to speed ideas through the drawing stage and into faster production.

For fifty years, Universal, the pioneer drafting machine, has remained the leader in accuracy—in ease of operation—in years of dependable service rendered. It combines into one fine, time-saving instrument most of the loose tools of the draftsman's art. It is adaptable in the field to any board.

And every Universal "Boardmaster" becomes a better instrument when equipped with the new Duraline Scales. These scales, made of aluminum, ground from the solid, are the last word in accuracy because they are engine divided at 70° F. They are easy on the eyes—no glare—large numerals, and they will not smudge paper—will not file the pencil point.

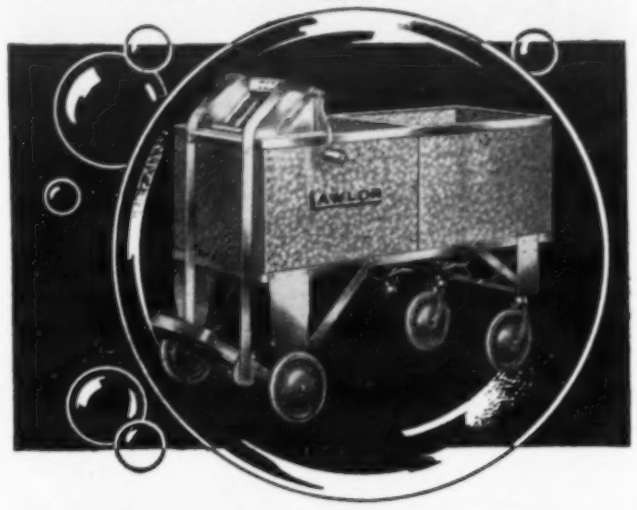
Ask your drawing material dealer about these two time and money saving tools, or write direct for descriptive bulletins.

UNIVERSAL DRAFTING MACHINE CORPORATION
7960 Lorain Avenue • Cleveland 2, Ohio

UNIVERSAL
DRAFTING MACHINE — DURALINE SCALES

If you write maker identify as IEN - 4047

LAWLOR MOPPING TANKS
Lead the Field in Ruggedness and Service



8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • hand or foot pressure wringers • perforated roll wringers • special drain shut-offs • hot dipped, galvanized chassis and frames • rubber tired, cadmium plated steel wheels.

Write for Catalog of Mopping Tanks, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size of floor.

S. C. LAWLOR CO. — Quality Floor Equipment for 50 Years
120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as IEN - 4048

Sticky, Gummy Materials CAN be pumped!

ADHESIVES
PUTTIES
SEALERS
HEAVY COATINGS

YOU CAN handle an amazing variety of heavy industrial fluids and semi-solids with Graco Powerflo Pumps! Air operated, they work in any location, pumping out of pails or 400 lb. original drums. Hoses, flow guns, spray guns, nozzles available. Tell us what your heavy material is, and we'll tell you frankly what savings Powerflo can make. We have some interesting case histories. Write now for free Powerflo catalog.

GRAY COMPANY, INC.
42 Graco Square
Minneapolis 13, Minnesota

GRACO Powerflo pumps

Regional Offices: New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as IEN - 4049

Instant HEAT
that's "QUICK-ON-THE-TRIGGER" and "RIGHT-ON-THE-TARGET"

USE THE WALL TRIG • R • HEAT SOLDERING IRON
READY TO SOLDER IN SECONDS

HEAT-CONTROL Thermostatic Action guaranteed for the life of the iron, or double your money back!

Heat is QUICK! Just touch the trigger, and in seconds TRIG-R-HEAT is ready to solder.

Heat is RIGHT! Exclusive thermostatic action (without fragile thermostats), quickly brings TRIG-R-HEAT to "on-the-target" soldering temperature and keeps it there. Built-in spotlight. Send for free catalog!

OVER 20,000,000 SOLDERING PRODUCTS SINCE 1864

WALL MANUFACTURING CO.
GROVE CITY • PENNSYLVANIA

If you write maker identify as IEN-4050

Buying Trolley Conveyors? Better See MATHEWS FIRST!

LET us show you the amazing performance of the new, light chainveyor, and the precision, labyrinth sealed **Loadstar** trolley. You'll see why you get more for your money when you buy **Mathews** overhead handling equipment. Have a **Mathews Engineer** call on you and tell you about it.

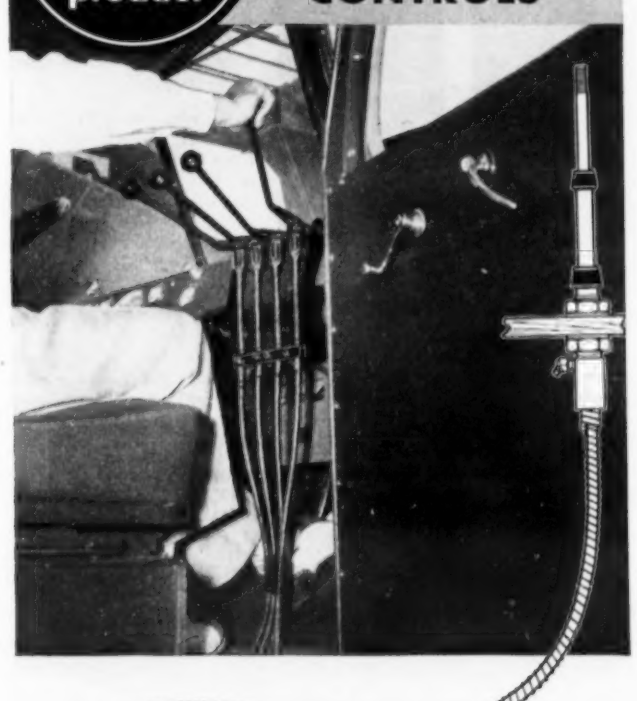
MATHEWS CONVEYERS

GENERAL OFFICES: *Mathews Conveyer Company, Ellwood City, Pennsylvania*
PACIFIC COAST DIV.: *Mathews Conveyer Co. West Coast, San Carlos, Calif.*
CANADIAN DIVISION: *Mathews Conveyer Company, Ltd., Port Hope, Ontario*

If you write maker identify as IEN-4051

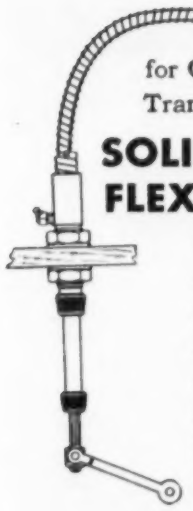
an ACCO product

TRU-LAY PUSH-PULL CONTROLS



for Continuous or Intermittent Transmission of Reciprocal Motion

SOLID . . . as a rod
FLEXIBLE . . . as a wire rope



Tru-Lay Push-Pulls snake around obstructions. Provide positive remote action. Operate while flexing, as on shakers. Few or many bends. Short or long distances. Ruggedly constructed for years of service. Capacities up to 1000 pounds input.

Write our Detroit office today for DH-287

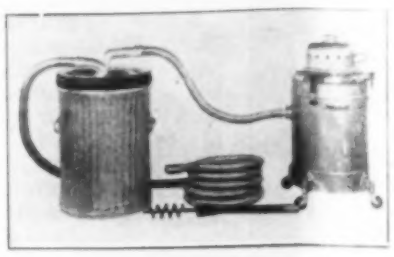
TRU-LAY PUSH-PULL CONTROLS

ACCO
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as IEN-4053

CLEANING . . Vacuum attachment adds dirt tank to suction line

Source: EMPIRE CHEMICAL PRODUCTS CO.
8-12 Longworth St., Newark 2, N. J.



User supplies refuse can

New assembly of the company's motor driven vacuum cleaning machine includes an air-tight lid with flexible tube connection to the machine and a companion connection to the machine's regular vacuum hose to apply on a standard 25-gal. steel refuse can. Included is a wire brush fitting to enter boiler fire tubes. Soot loosened by the brush is picked up by the vacuum and deposited in the can. It can be removed and emptied at intervals.

The vacuum machine is driven by a ⅞-hp. motor directly connected to a blower that develops 70 in. of water lift vacuum. Bearings are factory lubricated and sealed so the machine requires no lubrication in service.

If you write maker identify as IEN-4054

INSULATING . . Vinyl plastic tape, dielectric strength is 10,000 volts

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., New York 20, N. Y.

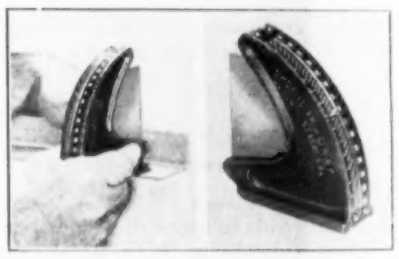
Not affected by sunlight

Royalastic is a new plastic insulating tape measuring 0.006 in. in thickness. One side is coated with a pressure sensitive adhesive that increases the thickness to about 0.007 inch. The tape is black in color, has tensile strength of 20 lb. per inch of width. It is resistant to abrasion and has good adhesion at low temperatures. It will not corrode electric conductors. It is resistant to attack by acids, alkalis, aging, oils, water. It is supplied in 30 and 66-ft. rolls measuring ¾ in. in width and in a 10-ft. roll ½ in. in width.

If you write maker identify as IEN-4055

GAGE . . Protractor reads angles at pointer on quadrant

Source: SHERIDAN-GRAY CO.
403-407 Via Chico, Palos Verdes Estates, Calif.



Particularly for sheet metal work

Plastic housing encloses a pivoted blade carrying a pointer in this new Angle-Chek protractor. The gage is held, as shown to the left in the illustration, to bring the leading edge of the blade in contact with the work. The angle measurement is read on the quadrant scale. Accuracy is within 5 minutes. List is about $15.00 for the new protractor

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4056

Femco COMMUNICATION

"YOUR VOICE OF ACTION"

Efficiency is improved—production goes up, when Femco equipment is installed. Consider: as many mike-speaker stations as you need, moving or stationary, anywhere in your plant, office or yard.

DEMONSTRATIONS ARRANGED

ASK FOR YOUR FEMCO DATA KIT

Femco CRANEPHONES
Talk from cab to floor and cab to cab

Femco AUDIOPHONES
Fixed-point industrial communication

Femco PAGEPHONES
Flexible inter-com and page systems

Femco PORTAPHONES
Movable as your work progresses

FARMERS ENGINEERING & MANUFACTURING COMPANY
IRWIN, PENNSYLVANIA

SPECIALISTS IN ELECTRONIC Communication and Control

If you write maker identify as IEN-4057

CLUTCHES by ROCKFORD

This Saw "Mows 'Em Down Even With the Ground"

The LITTLE GIANT Saw cuts down trees and stumps at any angle, bulldozes logs, bores post holes, propels itself anywhere a man can walk and loads itself on a truck. ROCKFORD CLUTCHES control power transmission in this versatile unit. Let ROCKFORD clutch engineers help solve your power transmission control problems.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE
ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

If you write maker identify as IEN-4058

new Willson BRONZE safety spectacles

combining **eye protection** with the **color styling** workers want today!

NEW NON-FLAMMABLE FRAMES are toughest plastic made for spectacles! Won't chip, crack or craze. New wire core spatula temples give extra comfort. Full range of sizes makes these new styles ideal for use with prescription lenses. See your Willson distributor or write for bulletin.

Style WB—with bronze spatula temples or half-plastic, half-cable temples; Style WBS has matching sideshields.

Also available in flesh-colored plastic frames—WK and WKS.

Choice of 2 Lenses in all styles—heat-treated Super-Tough® glass lenses or Willson Plas-Tough® plastic lenses.

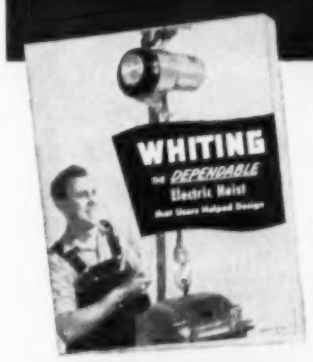
WILLSON®

WILLSON PRODUCTS, INC., 217 Washington St., Reading, Pa.

If you write maker identify as IEN-4059

LIFT at Lowest Cost!

GET THIS BOOKLET FOR FACTS ON THE HOIST THAT WILL SERVE YOU BEST!



Read *why* the Whiting Electric Chain Hoist is the *lowest* in operating cost . . . *why* it is the *safest* hoist and the *easiest* to operate. And read about the *exclusive* Whiting Warranty Plan, too. All this information, plus data on models and capacities is contained in Bulletin H-112. Write for a free copy now!

WHITING CORPORATION 15629 Lathrop Ave. • Harvey, Illinois

WHITING ELECTRIC CHAIN HOIST

If you write maker identify as **IEN - 4060**

Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . . reduces head size* . . . and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J
TOMKINS-JOHNSON

If you write maker identify as **IEN - 4061**

DO YOU HAVE A HOPPER FEEDING PROBLEM? HERE'S THE ANSWER...

Effective all-directional vibration for moving stubborn materials in hoppers and bins. Instantly self-starting, no lubrication or maintenance needed. A variety of sizes available to meet all applications.

Rugged, effective vibration without damage to your bins and hoppers when you use the patented Peterson pneumatic VIBROLATOR.

WRITE for complete description, installation data and sizes —

MARTIN ENGINEERING COMPANY
KEWANEE 2, ILLINOIS

If you write maker identify as **IEN - 4062**

NEW LUFKIN LEVELS

LARGE, COMFORTABLE HAND HOLD

TOP WEB FOR EXTRA RIGIDITY

WITH FEATURES MECHANICS PREFER

Micrometer-type threads give finer adjustment and greater accuracy. Shallow "V" base with clearance cut gives better surface contact on shafting. Equipped with cross level—larger sizes also have plumb vial. Ground and graduated main vial on No. 58 with each graduation equal to .005 inch per foot. Plain vials on the No. 57.

The new Master Precision Level No. 59 has accuracy of .0005 inch per foot. Send coupon for complete information.

BUY LUFKIN TAPES • RULES • PRECISION TOOLS FROM YOUR INDUSTRIAL DISTRIBUTOR

Lufkin Rule Company, Saginaw, Michigan, Dept. I
Send me circulars describing the new Lufkin Levels.

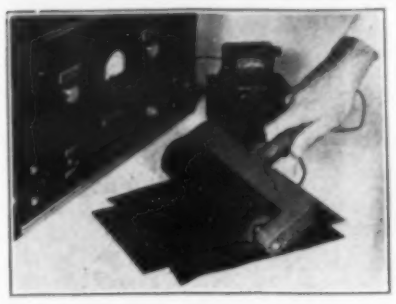
MAIL TODAY

NAME
ADDRESS
CITY ZONE STATE

If you write maker identify as **IEN - 4063**

TESTING . . Porosity detector for use on dielectric sheet materials

Source: VIKING INSTRUMENTS INC.
402 Towne St., East Haddam, Conn.



For paper, plastics, rubber

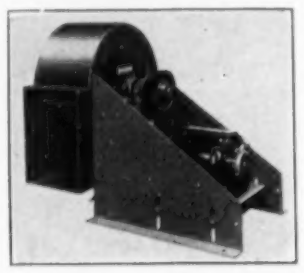
Hand operated Model PR-L, principally for laboratory use, and a production Model PR-P, for application on a machine handling dielectric sheet materials, are included in the company's new line of porosity detectors. The instrument applies an adjustable potential, ranging from 500 to 5,000 volts, between a grounded plate or roller and a roller connected to the equipment.

Current density is negligible but, in the event of a perforation through the material, the resulting current passage will actuate a signal lamp and an indicator. The indication also can be employed to operate a counter and a marker, the latter to indicate the position of the defect. Application can be made on materials to 0.125 in. in thickness. The detector will differentiate between holes that are not less than 0.2 second apart as the roller moves over the surface.

If you write maker identify as **IEN - 4064**

VENTILATING . . Centrifugal blower with 7½ or 9 in. aluminum impeller

Source: NEW YORK BLOWER CO.
3180 Shields Ave., Chicago 16, Ill.



Ask for Bulletin 253

Two sizes are included in the company's new Junior line of centrifugal blowers for installation in small offices, washrooms, laboratories, where quiet operation is an important factor. Both sizes are equipped with adjustable pitch sheaves and a belt connected motor so speed can be adjusted in the field. The motor rates ⅙ to ¾ hp. in four sizes for blower speeds minimum at 700 and maximum at 2,300 rpm. as required.

At 1,900 rpm. and ½ hp. input the smaller of the two assemblies rates 1,000 cfm. against ½ in. of static pressure. The larger one, with a ½-hp. motor operating at 1,300 rpm. at the impeller, rates 1,170 cfm. The housing can be positioned at an angle, in relation to the supporting frame, for given installation requirements.

Identify as **IEN - 4065**

First models are in operation and others are in the design stage for a new mass meter that reads in terms of pounds per minute on gases, liquids, slurries, particles in an airstream. The reading is independent of volume, temperature, pressure, viscosity, compressibility, external acceleration. Control Engineering Corporation will provide technical details.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4066**

FREE DOWEL PIN BULLETIN

Tells How to Save Assembly Time!

DANLY

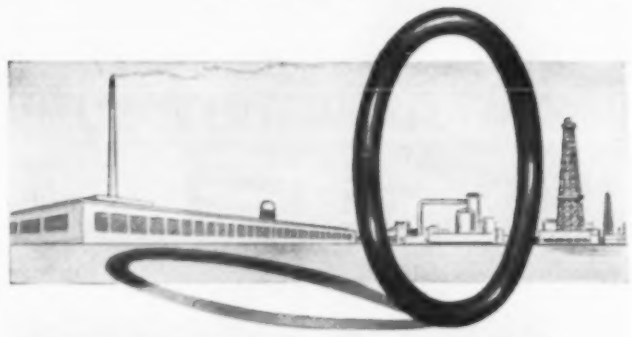
DOWEL PINS

- Accurately hardened—will not upset!
- Precision ground to limits of ±.0001"
- Two complete size ranges—standard and oversize
- Tapered lead end—easy to drive

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue
Chicago 50, Illinois

Complete Data!
Send For This Free Bulletin Today!

If you write maker identify as **IEN - 4067**



MINNESOTA O-RINGS

Basic in Hydraulic Applications

Engineers have come to recognize Minnesota O-Rings for their great tensile strength . . . resistance to oil swelling . . . capacity for extreme hydraulic pressure. The *injection molding* process permits extremely close tolerances while keeping the daily production high and the rejection rate low. They're built to stand up under a wide variety of conditions including rapid reciprocating motion. This involves hydraulic and pneumatic cylinders in *transmission, tractors, jacks, machine tools, etc.* Available in many rubber compounds including silicone. Your inquiry will be handled promptly.

INJECTION MOLDED TO EXACT UNIFORMITY

Write for descriptive pamphlets covering the Minnesota line of O-Rings and other injection molded rubber parts.

MINNESOTA RUBBER & GASKET CO.
3630 Wooddale Avenue • Minneapolis 16, Minnesota

If you write maker identify as **IEN - 4068**

TIMING EQUIPMENT

CONTROLS VARIABLE DURATION OF A PROCESS CYCLE

This self-contained time automatically starts or stops a process cycle after a predetermined lapse of time. It is available in four ranges maximum at 5, 15, 50 minutes, and 5 hours.

Two machanism designs include Model 308-R to break the control circuit at the end of a timing period and Model 308-B to break one circuit and make another at the end of the period.

Contact rating is 500 watts at 110 or 220-volt ac. List price is $36 for Model 308-R, $40 for Model 308-B.

Construction includes a synchronous driving motor, magnetic clutch, interval-setting knob and dial, in a metal housing with black ripple finish. The housing is made with knock-out openings for wiring and is available with a glass-covered dial.

Bulletin 770 provides design and operating details and includes circuit diagrams

THE PARTLOW CORPORATION
4 CAMPION ROAD NEW HARTFORD, N. Y.

If you write maker identify as **IEN - 4069**

Ross Air Systems

AIR HEATERS	Direct, Indirect and Combination Types. Oil, Gas and Steam Fired
INDUSTRIAL DRYERS	Batch and Continuous Types for Web or Particle Drying Using Any Source of Heat
INDUSTRIAL OVENS	Batch and Conveyor Types for Temperatures Up To 1000 deg. F. for Baking, Curing, Heat Treating, Aging
HEATING and VENTILATING, AIR CONDITIONING	Industrial Hoods, Air Supply and Exhaust, Duct Work and Control Apparatus
WASTE HEAT RECOVERY	Heat Interchangers and Economizers for Waste Vapor and Gases

The most modern and complete facilities for laboratory testing and manufacturing. Write for literature.

J. O. ROSS ENGINEERING CORPORATION
444 MADISON AVENUE NEW YORK 22, N. Y.
CHICAGO • DETROIT • BOSTON • LOS ANGELES • SEATTLE • MONTREAL

If you write maker identify as IEN-4070

Easy-low cost

RESOLITE SKYLIGHTING, and *NO MAINTENANCE!*

For skylighting new or old corrugated sheet buildings, just lap in sheets of translucent, corrugated RESOLITE — no framing, no flashing, no caulking!

And you can eliminate daytime lighting costs through Resolite's excellent interior diffusion of daylight.

Rugged Resolite is a Fiberglas-reinforced resin plastic; it's shatterproof, weatherproof and inert to ordinary acid or alkali industrial fumes.

Investigate Resolte for skylighting your industrial buildings — TODAY! For complete information and name of your nearest distributor, write:

RESOLITE CORP., Rt. 19, Zelienople, Pa.

If you write maker identify as IEN-4071

BOOST OUTPUT with *Impact* AIR HAMMER

the efficient modern method for

PUNCHING . . . . RIVETING
ASSEMBLING . . EMBOSSING
FORGING . . . . . FORMING
PEENING . . . . . MARKING
CRIMPING . . . . . CUTTING
BLANKING . . . . . COINING

Ready . . . Mead's new air-powered Impact Hammer . . . weighing only 27 pounds . . . yet having a wallop like a pile-driver! One of its outstanding applications is multiple piercing of large metal sheets before or after forming. It can punch holes as close together as 1¾" on centers. Value of the impact readily adjusted from 4,500 pounds down to only a few ounces. Set ups are quick, easy. Besides innumerable punching operations, with suitable attachments it is capable of upsetting rivets, blanking out soft materials with knife dies, light coining, forging operations, etc. Get complete facts on this versatile, handy new tool and other Mead Air Power devices. Write for Catalog.

MEAD AIR OPERATED DEVICES *save precious man-hours!*

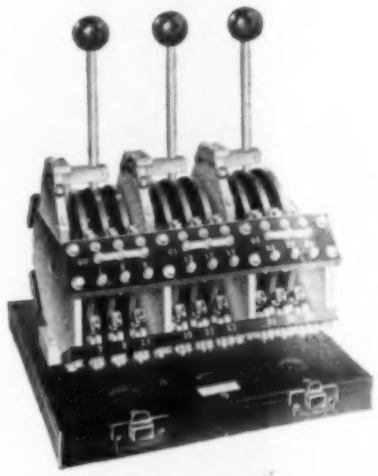
CATALOG READY
Send for copy of our new Air Power Catalog illustrating, describing many new man-and-money-saving devices.

MEAD SPECIALTIES COMPANY
4114 NORTH KNOX AVENUE
DEPT. EA-43 • CHICAGO 41, ILL.

If you write maker identify as IEN-4073

SWITCH . . Lever operated multiple assembly for mill service

Source: POST-GLOVER ELECTRIC CO.
223 W. 3rd St., Cincinnati 2, Ohio



Current as specified

Type MD is a new assembly of one to four switches in a single enclosure, each with a maximum of six points forward and six in reverse. The switch operates in connection with a star wheel and roller type ratchet to provide definite indication to the operator for each point. Distance between these points is 6¼ degrees. Rotation is on a stationary hardened stainless steel shaft.

The assembly measures 17½ in. front to back on the base by 21 in. in height from the base to the top of the lever knob. Width ranges from 7⅝ to 21¾ in. depending on the number of levers.

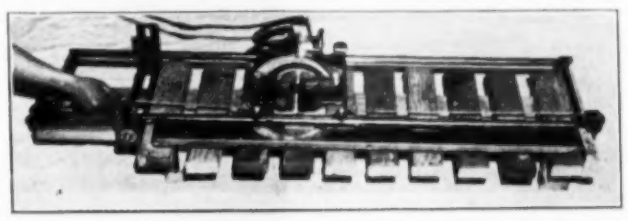
Cams actuate the double break silver contacts. Laminated phenolite is employed in the terminal strips. The operating knobs are made of Bakelite. They are mounted on cold rolled steel rods ½ in. in diameter. An available enclosure, which has been removed in the illustration, consists of a sheet steel hood over end castings.

The levers ride in slots and are fitted with sliding covers operating in grooves to prevent dirt from entering the enclosure. Spring return to center or "off" position can be specified. Bearings are replaceable and self-lubricating.

If you write maker identify as IEN-4074

WOODWORKING . . Circular saw to rip and cross-cut plywood panels

Source: SEE-SAW
4138-42 Syracuse, Dearborn, Mich.



Rail travel measures 50 inches

Tubular rails mount a roller equipped carriage in a hinged frame in this new machine. The carriage cannot come off the rails. It is moved along them by an endless rope traveling over pulleys at the two frame ends. A standard 6 to 10-in. portable electric saw mounts on the carriage and can be adjusted for angle and depth of cut.

The frame hinges upward to take work between it and the supporting table which is supplied by the user. A cross-cut is made by moving the saw along the rails. Panels are ripped by setting the saw at 90 degrees with the rails and feeding the work through the blade.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4075

IT'S ALLIED FOR RCA

Authorized RCA Distributor

ELECTRON TUBES FOR INDUSTRY

Quick, Expert Service
ALLIED stocks for *quick shipment*, the world's largest distributor inventory of RCA special-purpose tubes. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for quick shipment. Fill *all* your electronic needs from one complete source.

ALL TUBE TYPES IN STOCK

- Vacuum Power
- Thyratrons
- Vacuum & Gas Rect.
- Ignitrons
- Cold-Cathode
- Phototubes
- CR Tubes
- Camera Tubes
- Monoscopes
- Special Types

1953 ALLIED CATALOG

Refer to your ALLIED Catalog for *all* electronic supplies. Write today for FREE copy of the complete 236-page 1953 ALLIED Catalog.

FREE Interchangeability Directory
Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for Free RCA Guide No. 37-046.

Everything in Electronics
FROM ONE RELIABLE SOURCE

ALLIED RADIO
833 W. Jackson Blvd., Dept. 14-D-3
Chicago 7, Ill.

FREE!—Send for it today!

If you write maker identify as IEN-4076

LOOK

FREE fan catalog for '53!

New models, new finishes have been added to the Emerson-Electric fan line—most complete fan line in America. See these fans for every commercial, industrial and institutional use. For free catalog write Dept. T106.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN-4077

TORCH-O- says:

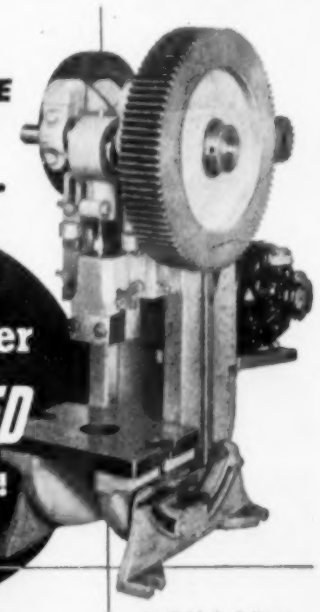
"I'm trigger controlled for faster, easier soldering—brazing—melting"

Torch-o-matic saves time—saves gas! Just pull the trigger and air-acetylene gas automatically ignites—release trigger and gas shuts off instantly. No hazard from open flame when not in use. One-hand operation with no "time-out" to light up and adjust. Pays for itself many times over in savings and convenience. Three sizes of tubes and nozzles take care of any job. Fits your present equipment. Write for complete details.

VELOCITY POWER TOOL COMPANY
201 N. Braddock Ave. • Pittsburgh 8, Pa.

If you write maker identify as IEN-4078

When a SLOW STROKE will speed production...



GET A **benchmaster** ***BACK-GEARED*** **PUNCH PRESS!**

Benchmaster gives you the answer to deep-draw and forming operations on small presses...The new BACK-GEARED Series! Built to the same rigid specifications as standard and deep throat models, but now equipped for SLOW, POWERFUL STROKES ranging from only 40 to 100 per minute! Benchmaster Automatic Friction Roll Feeds available in several roller widths for automatic feeding.

Available in 3 Sizes:
4 Ton Standard
4 Ton Deep Throat,
7½ Ton models.
Shut heights and other general specifications remain the same as standard models.

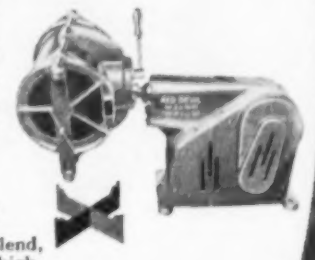
Ask for facts today!
P.S. *You still enjoy Benchmaster dependability and economy on the Back-Geared Models!*

benchmaster
MANUFACTURING COMPANY
1835 West Rosecrans Ave., Gardena, California

If you write maker identify as IEN - 4079

better paint job with Red Devil Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion puts pigment in perfect suspension —quick!



NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, *or hard-to-keep-mixed blends,* Red Devil can arrange to have test samples agitated at a nearby location.

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of 1868 **Red Devil Tools.** 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN - 4080

COME *Clean with a* Clarke

Thirty-five years of Clarke know-how are built into Clarke floor maintenance machines to do your cleaning easier, faster and **better.** A Clarke does the job month after month without repair expense because it's job-designed and built for years of rugged service. That's why you should investigate Clarke **before you consider any other floor maintenance** equipment.

WD-23 WET-DRY VACUUM

No cleaning job — wet or dry — is too big for the WD-23 Wet-Dry Vacuum. Heavy porcelainized tank, inside and out, resists rust. Handy dump valve eliminates heavy lifting. Handy attachments available. Model WD-15 for smaller area jobs.

P-17 FLOOR MAINTAINER
(With Water Tank Attachment)

Scrubbing a floor spotlessly clean is no chore for this Clarke P-17 floor maintainer (shown with water tank attachment, available at slight extra cost). Works easily on any type floor.

Clarke SANDING MACHINE COMPANY
284 East Clay Avenue, Muskegon, Mich.
Authorized Sales and Service in Principal Cities

SEND TODAY!

Send this coupon for full, colorful details on Clarke floor maintenance equipment that will save you working time — and money.

Clarke Sanding Machine Company
284 East Clay Avenue, Muskegon, Michigan

Please send me full details on Clarke equipment and the name of my nearest dealer.

NAME_____

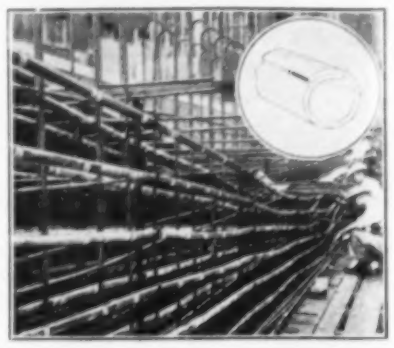
ADDRESS_____

CITY_____ ZONE____ STATE____

If you write maker identify as IEN - 4082

CONSTRUCTION . . Split plastic tube for cables in pre-stressed concrete

Source: ANCHOR PLASTICS CO.
36-38 36th St., Long Island City 6, N. Y.



Ask for Bulletin RM/53

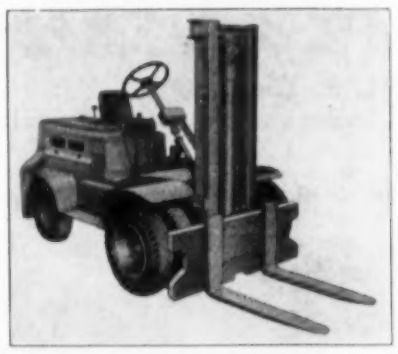
Aeroflex trade names a new split plastic tube with a ½-in. corrugated overlap section. This section can be opened to apply the tube around the tension cables employed in pre-stressed concrete. The tube prevents the steel strands from bonding with the concrete. It also prevents the poured mix from getting in between the cable wires. Application is by opening the tube and permitting it to close progressively over the cable. It eliminates need to pull the cables in from one end.

Nine sizes range from ¾ to 1¾ in. in inside diameter. Wall thickness is 0.03 or 0.04 inch. The corrugated overlap is ½ in. in each case. Following application the tube is secured in placed by using masking tape on 1½ or 2-ft. intervals. The tube is supplied in 10-ft. random lengths in cartons.

If you write maker identify as IEN - 4083

TRUCK . . Engine-driven fork lift with 3-speed transmission, 3 ton

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Climbs steep grades

Addition of a low speed ratio, beyond that in the originally developed Yardlift-60 truck, enables the truck to climb a 24 per cent grade with a rated load. The new 3-speed transmission is available with a friction clutch connection to the engine. Also new in the truck assembly is a fork mounting designed for quick interchange of attachments as recommended by the Industrial Truck Association for equipment made by its members.

Identify as IEN - 4084

Torrington Company has written about and illustrated a new design of bearing seal known as the Thin Rind. It is suited particularly for needle bearings and is made with a lip of leather or synthetic material to maintain a small but effective area of contact with the shaft. The lip faces inward or outward depending on the service requirements. Several makers of the seal are named in Torrington's "Bearing Engineer," Volume 13, Number 1.

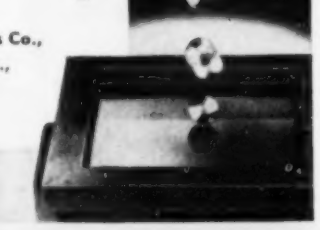
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4085

This glass can take impact!

Dropped 10 feet, a ½-lb. steel ball bounces right off ¼"-thick L·O·F *Tuf-flex** Tempered Plate Glass. And *Tuf-flex* can carry more load, resist greater thermal shock than untempered glass. Use it where you couldn't use glass before. And see how this *tough* glass can *replace* costlier materials in your products. Write for your free *Tuf-flex* booklet (T-F 8). Order from your nearest L·O·F Distributor. *®

Libbey·Owens·Ford Glass Co.,
9243 Nicholas Bldg.,
Toledo 3, Ohio



L·O·F GLASS · PLASKON · FIBER GLASS

LIBBEY • OWENS • FORD GLASS COMPANY

If you write maker identify as IEN - 4086

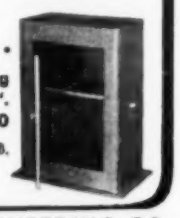
TOMLEE *Metal Cutting* BAND SAW

only $89.50
F.O.B. MINNEAPOLIS

NOW each bench can be equipped with a Tomlee to break your production bottleneck It's a low cost auxiliary to your heavy duty metal cutting machine, so often kept tied up with big work. The rugged, cast iron Tomlee will cut any metal that will run through its 5⅜" throat. Large work table easily tilts to 45° and is grooved to take a mitre gauge for compound angle cuts. Ball bearings throughout, operates at 4 speeds. Delivered complete with simple instructions, a set of guides and a ⅜" blade. *Write for bulletin.*

Accessories

Band Saw Stand. All-steel cabinet for mounting motor and storing accessories. 15"x23"x29¾". $37.50
No. 31500 Mitre Gauge. $5.00
No. 455 Rip Fence. $5.00
½ HP Motor. 110-230 V. $43.50

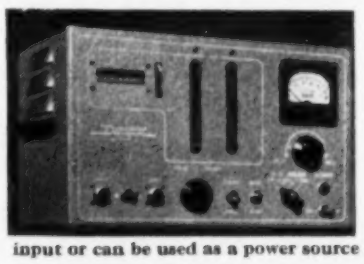


ALL PRICES F.O.B. MINNEAPOLIS

TOMLEE TOOL & ENGINEERING CO.
721 Washington Ave. N., Minneapolis 1, Minn.

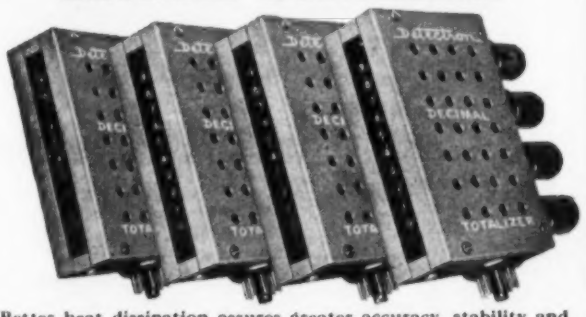
If you write maker identify as IEN - 4087

Detectron SCALERS



The DS-506 Poli-Scaler is a versatile laboratory scaler easily adaptable to GM and scintillation counting and frequency checks. Pulse height discriminator from 0 to 100 volts; positive or negative pulses. Has a high voltage power supply variable in 1-step from 0 to 2.5 kv. The power can supply either the GM input or can be used as a power source for accessory equipment.

DECIMAL TOTALIZERS



Better heat dissipation assures greater accuracy, stability and dependability. Standard octal mounting plugs assure easy adaptation to most equipment. Direct readings of astronomical proportions are obtainable by cascading several units together. Each unit uses four No. 5693 computer tubes and careful selection of critical parts insure maximum precision. Two models. TU-9 counts 50,000 per second; TU-100 counts 100,000 per second.

Write for folder 75

DETECTRON CO. 5420 Vineland Ave., No. Hollywood, Calif.

If you write maker identify as IEN - 4088

NICE Announces 'C' Series

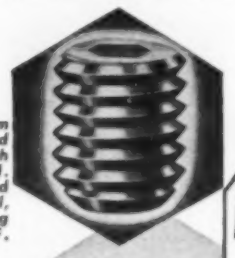
"C" Series—A new NICE inch size line of precision radial bearings.

PRODUCT DESIGNERS will be interested in the "cost saving" possibilities offered by this new line of single row, retainer type, precision radial bearings. Made in inch dimensions which correspond to established light duty inch standard sizes, "C" series bearings are designed for light duty radial, thrust or combined radial and thrust load applications and speeds in the neighborhood of 5000 R.P.M. maximum. They are available without shields, single shielded or double shielded.

For complete information on "C" series bearings and other new additions to the NICE Line write for catalog No. 150.

NICE BALL BEARING COMPANY
NICETOWN PHILADELPHIA PENNSYLVANIA

If you write maker identify as IEN - 4089



Standard in sizes from No. 4 to 1" diameter and from 1/8" to 3" length cup point N.C. thread. Many sizes also standard in N.F. threads and oval, flat, cone and half-dog points, N.C. and N.F. threads.

ALLEN○HEAD Pressur-Formd SET SCREWS

- Threads Class 3 fit
- Greater Holding Power
- Scientific Locking Principle
- Burr-free threads and sockets

Allen○Head Set Screws require no weakening trick features. They hold better because they have the strength to permit maximum tightening. They are positively friction locked by maximum surface contact throughout the length of the thread.

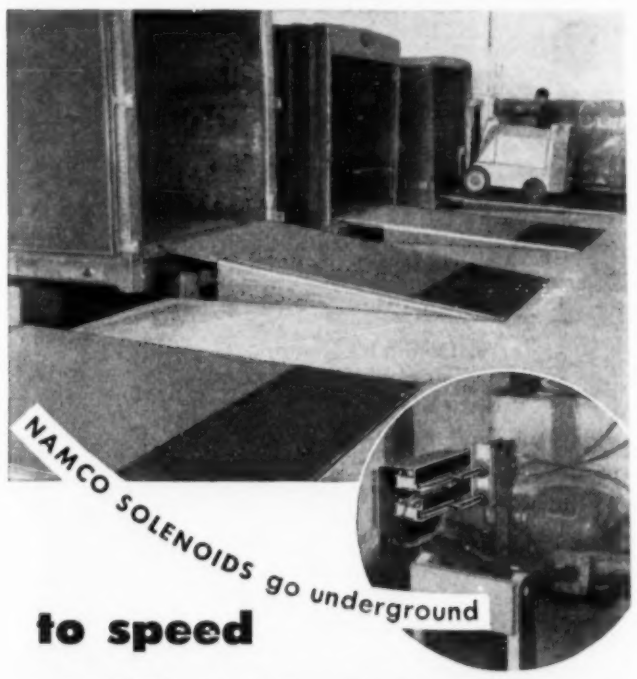
FULL THREAD CONTACT

On an Allen ½" x ¾" N.C. thread set screw, makes 1½ square inches of thread contact, for full holding power.

SOLD ONLY THROUGH LEADING DISTRIBUTORS

THE **ALLEN** MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

If you write maker identify as IEN - 4090



to speed multiple dock loadings

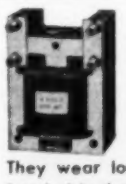
Here is a battery of 5 Dock Ramps over which Addressograph-Multigraph Co. Cleveland, moves scores of truck loadings in and out each day . . . "*materially reducing waiting time of highway carriers and increasing volume of merchandise handled per man hour.*"

Engineered and built by Beacon Machinery Inc., East St. Louis, Illinois, these 10-ton capacity ramps provide ± 12" vertical and 14" horizontal travel—are automatically leveled. Each ramp is operated by 2 hydraulic rams located in each pit, all remote push button controlled through

Namco "Stellite"-Welded Solenoids

Namco Solenoids were first built with stamina to satisfy our own hydraulic machine tool needs; they are now standard equipment in 85% of the machine tool industry —many of which are engineered to the job.

Either AC or DC type solenoids may be specified. Standard ratings range from 2½ to 25 lbs. at 1" stroke. Ask your engineers to talk with ours. Catalog EM-52.



COMPACT • DEPENDABLE • TROUBLE-FREE

These compact electrical Solenoids are more positive and less costly than cumbersome mechanical contrivances that require frequent inspection and replacements.

They wear longer because the patented "Stellite"-Weld is bonded in the end of the plunger at its vital point of impact against the frame. In addition, upper guide faces of the plunger are hard chrome plated—wear resisting.

ELECTRICAL MANUFACTURING DIVISION

The NATIONAL ACME CO.

178 E. 131st Street, Cleveland 8, Ohio

Acme-Gridley Bar and Chucking Automatics, 1-4-6 and 8 Spindle —Hydraulic Thread Rolling Machines—Automatic Threading Dies and Taps—Limit, Motor Starter and Control Station Switches—Solenoids—Contract Manufacturing.

If you write maker identify as IEN - 4092

GAGE . . Roughness comparator to classify machined surface finishes

Source: ACME INDUSTRIAL CO.
202 N. Laflin St., Chicago 7, Ill.

To make quick check

Surface Stick is a new bar assembly of cylindrical specimens individually finished to look exactly like the machined surface required by given set of specifications. The finishes are identified by micro-inch readings. Individual units can be removed, interchanged and grouped as required.

The operator holds the assembly close to his work for visual comparison of surface roughness, waviness and other comparable characteristics. The individual specimens are approximately 1 by 1 in. in round plug form. They also can be supplied in 1 by 1½ by 1-in. rectangular blocks in boxes assembling 3, 5 or 8 different finishes.

If you write maker identify as IEN - 4093

ADHESIVE . . Heavy bodied emulsion applies Pliofilm on porous surfaces

Source: FEDERAL ADHESIVES CORP.
212-18 Wythe Ave., Brooklyn 11, N. Y.

Technical data upon request

Type B55 is a new emulsion type adhesive for use on porous surfaces such as kraft, glassine, paper to which Pliofilm transparent plastic film is to be adhered. Bags and liners of the plastic can be secured inside paper bags or cartons. The material is characterized by its fast initial tack which conforms with normal machine speeds.

If you write maker identify as IEN - 4094

PROTECTING . . Coated fabric glove surfaced to provide firm wet grip

Source: EDMONT MFG. CO.
1224-28 Walnut St., Coshocton, Ohio

Neoprene reinforced

Redmont trade names a new line of coated fabric work gloves in which a new surface finish extends from the middle of the palm to the finger ends to provide a good grip on wet objects. The surface will not chip, crack or peel and has excellent wearing characteristics. The finish is made of a material that cures into and becomes a part of the Neox coating. Five styles are included in the line. The 12-in. coated gauntlet is illustrated as typical of the line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4095

If you write maker identify as IEN - 4096

KLIXON Thermo Snap CONTROLS

Provide Dependable Temperature Control in York-Shipley Boiler Units

York-Heat oil-fired table-top boiler units, manufactured by York-Shipley, Inc., York, Pa., are designed to do an outstanding job of home and hot water heating.

To insure accurate temperature control, York-Shipley uses Klixon Thermo-Snap Controls in all their units. Mr. H. Leroy Mohn, project engineer, writes: *"We insist on Klixon Thermo-Snap Thermostats in our house heating boilers because we find they accurately control unit operation. Klixon C4370 thermostats are used to control the operation of burners and circulators to automatically govern the temperature of the home and domestic hot water."*

What's your temperature control problem? Klixon Thermo-Snap Controls are meeting the requirements for military and civilian products, daily.

Write for further information.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
204 FOREST ST., ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN - 4097

measure tension Accurately!

When you equip your shop or laboratory with Apco Mossberg Torque Screw Drivers, testing or measuring final tension on precision fasteners is quicker...easier...and infinitely more accurate. Here's why.

Apco Torque Drivers are especially designed for maximum convenience, precision performance. Large, easy-to-read dials assure instantaneous measurements. Lighter, stronger construction makes them easy to handle . . . simple to operate. There are no springs or delicate parts to get out of kilter.

What's more, every Apco driver—from the 0 to 6 in. oz. size to the 0 to 24 in. oz. models with large positive and positive-negative dials —comes complete with a standard Stanley tool holder to accomodate interchangeable bits. With an Apco Driver, you can tighten or test torque on *all* types of fasteners —including light plastic screws.

Get the full facts on Apco Mossberg Torque Tools today! Contact your distributor or write direct. Apco Mossberg Co., 171 Lamb Street, Attleboro, Mass., U.S.A.

APCO MOSSBERG CO.
ATTLEBORO, MASS.

If you write maker identify as IEN - 4098

This Bond 36-A Caster is Your Best Buy for DEPENDABLE SERVICE

C-136-A Series—Double Ball Race Swivel Caster equipped with Roller Bearing Celoron Wheels.

Ask your industrial distributor . . . **he knows** that Bond 36-A Series Casters fit most service requirements. These universally used, completely dependable casters incorporate a fork, base and king bolt construction that distributes the load *evenly*. Two ball races of almost equal diameter, set one below the other, permit *easy swiveling*. All moving parts in the ball race are pressure lubricated.

Remember, *your best buy is Bond*—and your distributor will be glad to help you select the right Bond casters for your jobs. Ask your distributor for a copy of the Bond Catalog K-38 or write direct.

Bond 1-A Series Stationary Truck Casters give dependable service as companion casters to the Bond 36-A Series Casters.

BOND FOUNDRY & MACHINE CO.
Manheim, Penna.

If you write maker identify as IEN-4099

Quick as a wink measure both AC and DC

WITH A COLUMBIA TONG TEST AMMETER

(Voltage attachment available)

- Both AC and DC ampere readings are made instantly and accurately without breaking circuit or scraping insulation
- Operated with one hand by merely clamping tongs around conductor
- Cannot burn out
- Scale ranges up to 1000 amperes AC or DC
- Voltage attachment reads up to 600 volts
- Five types to accommodate cables up to 3⅞", bus bars up to 4½"x½"

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

If you write maker identify as IEN-4100

Industry's Best Grease Buy!

Why? Because it's a heavy-duty grease that works well in hot, cold or wet locations—adheres to metal—resists moisture, oxidation, and high temperatures! A multi-purpose grease that meets more needs than any other solid lubricant.

HOUGHTON
COSMOLUBE
multi-purpose grease

Get "Cosmolube" bulletin from E. F. Houghton & Co., Philadelphia 33, Pa.

a product of . . .

E. F. HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

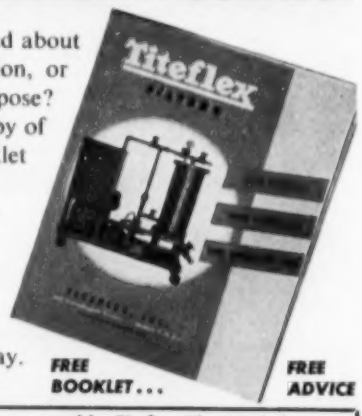
Ready to give you on-the-job service . .

If you write maker identify as IEN-4101

REDUCE FILTRATION TROUBLES!

Need a filter but worried about filtration costs, operation, or suitability for your purpose? Then get your Free Copy of the Titeflex® Filter Booklet right away.

Ask for a Titeflex Engineer to set you straight on costs and equipment for your special needs. No obligation. Mail coupon today.



FREE BOOKLET . . . FREE ADVICE

Businesses served by Titeflex Filters include . . .

Chemical • Distilling	Dry Cleaning
Electroplating	Paints & Lacquers
Soap • Cosmetics	Water
Pharmaceuticals	Food Processing
Wine • Beverages	Edible Oils
Machine Tool	Food Extracts

Titeflex

Let Our Family of Products Help Yours

MAIL COUPON TODAY

TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N. J.

☐ Please send me a copy of your Free Booklet about Titeflex Filters.

☐ We need the advice of a Titeflex Filtration Engineer . . . without obligation on our part.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

For Your Special Information

ALL MAKERS ARE LISTED IEN S-8

Take all of the expositions of equipment, materials and supplies, add to them all of the directories naming sources for these things, include the classified telephone books from all sections of the United States, cap them off with all of the industrial publications and you have a partial picture of the product sources and services that are listed, defined and advertised in Thomas' Register of American Manufacturers.

We say partial because the Register contains all of the verifiable names you will find elsewhere plus a great many that appear there only by product, by location and by rating. The $15 price plus handling costs make a small price indeed for this most complete assembly of source information.

SUPERINTENDENT OF DOCUMENTS IEN S-9

It is required in every case, except those named specifically otherwise, that you address the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. and that you enclose cash in the amount named for any piece of printed matter you want to receive from official Washington.

OPPORTUNITY FOR ECONOMY IEN S-10

Fulton Lewis Jr. spoke before the Freedom Club in Los Angeles on the opportunity for individuals to help in the business of effecting economy in government. The club pledged its efforts to collect suggestions from its members and forward them to Washington for appropriate study. Mr. Lewis suggested that other organizations could do the same job with its individual members, each member reporting opportunities that would come within his range of action. If you have a suggestion or want to know more about the plan, we suggest you address Mr. Lewis at the Barr Building, 9-10 17th St., N. W., Washington 6, D. C.

MATERIALS HANDLING IEN S-11

Make your plans now to attend the Materials Handling Exposition to be held in Convention Hall, Philadelphia, May 18 to 22. Some 250 companies will exhibit their equipment. Many new developments will be on view for the first time.

ELECTRICAL EQUIPMENT IEN S-12

Construction materials, controls, wires and cables, devices, apparatus, industrial and commercial lighting equipment will be on view at the Annual Electric Exhibit to be held in Detroit May 19 to 22. The exhibit is sponsored by the Electrical Manufacturers' Representatives of Michigan.

If you write maker identify as IEN-4102

SHORT RUN STAMPINGS

Any Shape—Any Material

HPL produces stampings economically in lots of 25 to 25,000 pieces, for experimental or development work or other limited quantity requirements.

Exclusive HPL Fast-Tooling method saves up to 80% of conventional tooling costs, permits minor die changes quickly and inexpensively. Dies are maintained for all future orders without charge.

Speedy delivery is available on parts made to your rigid specifications from any material that can be stamped. Send sample part or blueprint for quotation.

Write today for Bulletin No. 718

716-HPL

HPL Manufacturing Co.
15175 Miles Avenue • Cleveland 28, Ohio

If you write maker identify as IEN-4103

One standard package of ISOMODE* PADS gives you

vibration control for 80 tons of machines

. . . INCLUDING PRESSES

It pays to keep a standard package of ten Isomode Pads in stock. Costs less that way—and then you always have it on the spot for installing machinery—up to 80 tons of it. Supporting up to 50 lbs/sq. in., Isomode Pads really make a difference in plant operations. Here's how: (1) No need to bolt to any type of floor. Machines stay put. (2) Isomode Pads help reduce noise level, increase comfort. (3) Less disturbance to offices or adjacent equipment. (4) Less damage to building, less strain on machines, less maintenance. Write for data.

*Trade Mark Reg. U.S. Pat. Off.

THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.

If you write maker identify as IEN-4104

Announcing...

MULT-A-FRAME

World's *only* fully-locking steel framing material!

Frames, hangs, supports anything easier, faster, at low cost. Three basic parts give skyscraper strength without bulk.

Standard and heavy-duty channels with Safe-Locking Fittings for every job. Over 1000 and ONE uses. For racks, inserts, platforms, scaffolds. Fully adjustable, completely salvable.

- **No welding, drilling or special tools.**

Send for catalog and samples. Write: Dept. 110

MULT-A-FRAME DIVISION
2200 Franklin Street
Detroit 7, Michigan

MULT-A-FRAME AINSWORTH DETROIT, U.S.A.

*Trade-mark. Patents Pending.

Ainsworth Manufacturing Corporation

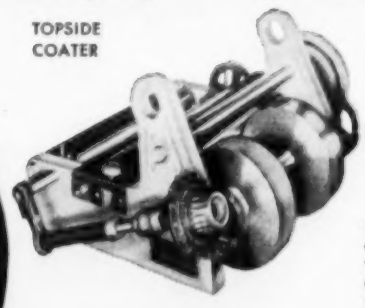
If you write maker identify as IEN-4105

60 years of dependable service

POTDEVIN

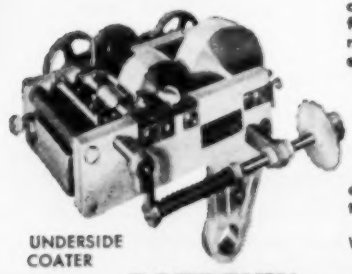
multi-purpose COATING MACHINES

TOPSIDE COATER



for TOP-SIDE or UNDERSIDE COATING

For use as a self contained and self powered unit or for mounting on other equipment—for topside or underside solid or strip coating. Particularly suited for applying resins, varnish, adhesive, lacquer, etc., to webs or sheets of paper or other materials in widths up to 21 inches. Ductor roller adjustment controls amount of coating applied. Removable reservoir and coating rollers permit thorough quick cleaning.



UNDERSIDE COATER

Write for full particulars

POTDEVIN MACHINE CO.
213 North Street Teterboro, N. J.

ESTABLISHED IN 1893 POTDEVIN

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

If you write maker identify as IEN-4106

ENAMELSTRIP

STEEL · ALUMINUM · BRASS · PRE-FINISHED COLOR COIL

assures a **perfect finish**

before fabricating

You can easily cut production time and cost with Enamelstrip, the continuous-feed, pre-colored metal coil. Leading manufacturers of metal products are using it with outstanding results in a wide variety of items. Enamelstrip's exclusive, flexible finish withstands the stresses of drawing, bending and forming without cracking or peeling. Many companies have entirely eliminated their finishing departments! Any metal in any finish will be coated and slit to your own specifications.

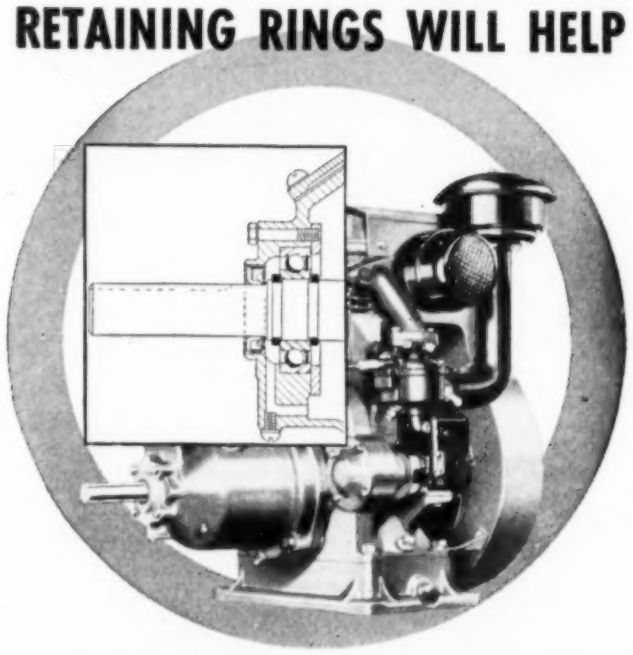
Write *TODAY* for detailed color bulletin

THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN-4107

SAVE WHEREVER YOU CAN!

RETAINING RINGS WILL HELP



These inexpensive, efficient artificial shoulders save metal and money on Wisconsin air cooled heavy duty engines.

And in addition to saving money and metal, retaining rings save many costly hours in assembly time. Instead of the former wasteful practice of cutting down large shafts, you can redesign to groove smaller shafts and use these high grade steel rings. In your housings, too, rings will save money and improve your products, your machines and your profits.

Every product—metal, wooden or plastic—and every machine should be examined now to see where shoulders and collars can be redesigned to effect great savings by the use of steel retaining rings.

Let us show you how they can do an efficient job for you on your shafts or in your housings.

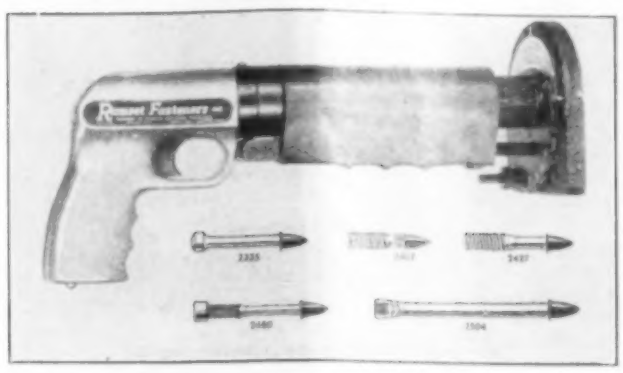
Write today for booklets on many types of National Retaining Rings.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN-4109

FASTENING . . Steel anchor studs driven by cartridge in portable tool

Source: RAMSET DIVISION
12120 Berea Road, Cleveland 11, Ohio



Weight 6¾ lb., length 12 inches

Jobmaster is new design of the company's Model-122 powder actuated stud driving tool, previously described IEN-11330-50. Improvements in the new design include a rotating indexing safety shield at the nose end to position the point of entry of the stud from a reference edge, a manually set safety control so the tool cannot be discharged accidentally and an angle control that keeps the tool inoperative when it is at more than 5 deg. from perpendicular to the work surface.

The handle and trigger assembly is hinged to the barrel so the tool can be pivoted quickly to open position to insert a stud and driving cartridge. A barrel extension and a disc adapter are in the handle. The barrel is ported to minimize spall and splintering of wood into which a stud is driven.

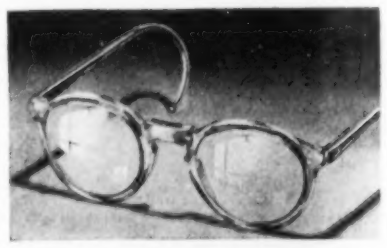
The tool drives a range of plain and threaded studs with shank diameter to 5/32 in. and overall length to 3¼ inches. These studs are the same as the Tru-Set design, previously described IEN-4424-52. Each is tipped with an elastic material, slightly larger than the bore in the tool barrel. It keeps the fastener straight in the barrel when the tool is actuated. At the same time it cleans the barrel and conserves power developed by the powder charge.

The discharge will drive the fastener through steel into concrete, masonry or other hard material to form an anchor. It will secure wood to concrete or to steel. It will pin two sheets of steel together. Typical fastener designs are shown.

If you write maker identify as IEN-4110

PROTECTING . . Spectacle goggle with plastic frame and safety lenses

Source: PENNSYLVANIA OPTICAL CO.
232-36 S. 8th St., Reading, Pa.



Adjustable to fit

Model 707 is a new spectacle type goggle with acetate plastic frame designed to retain the safety lenses when subjected to severe impact. The frame is non-sparking construction. It includes wire core temples with adjustable cable-wound ends, flaring nose pads and high line temples. Flat or curved lenses can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4111

BEST DEFENSE AGAINST CORROSION

Start with

TYGORUST

"the no-prep vinyl primer"

- minimizes surface preparation
- brushes easily—sprays beautifully
- dries hard in 5-15 minutes
- covers up to 500-600 sq. ft./gal.
- goes under any type finish
- adheres to wet or dry rusted steel, to wood, to concrete, or to previously painted surfaces.

Finish with

TYGON "Series TP" PAINT

"the vinyl finish of maximum protection"

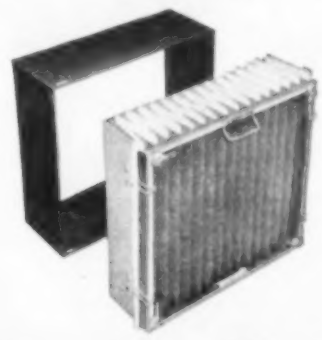
- easily applied by brush or spray
- fast drying and non-oxiding
- fully flexible and chip-resistant
- non-flammable when dry
- easy to clean and long lasting
- resists fumes and spillage of acid, alkalies, oils, greases and water.

Write for full details—ask for Bulletin 720!

360 C

U. S. STONEWARE CO.
AKRON 9, OHIO

If you write maker identify as IEN-4112



Airmat PL-24

BETTER BUILT . . . FOR LONGER LIFE

Here's a filter that is really designed for hard usage and long, trouble-free life. The AIRMAT PL-24 is also built for easy maintenance. The precision-made components fit without binding—and separate easily for changing media. There are more than a quarter million AIRMAT PL-24 units now in service—evidence of real dependability! The PL-24 provides a maximum filtering area (7 to 1 ratio) with *positive* sealing against air leakage. Please write for Bulletin No. 230E.

American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN-4113

how THE SHAMROCK has cut maintenance costs

New coatings based on VINYLITE Brand Resins at Houston's famous Shamrock Hotel go on fast—dry fast—get rooms into service fast. Loss of revenue is at a minimum. Applied directly over the old paint, they duplicate the original colors exactly.

After 32 months, rooms decorated with these paints have not needed repainting! Touching-up with a spray gun gives the appearance of a completely new job. Repeated washing leaves color and texture unchanged.

What's more, the Shamrock is using these coatings on exterior concrete, metal canopy and awning frames, metal furniture—further proof of their decorative and protective qualities. Properly formulated, properly applied, they adhere tightly, won't crack, peel or fade. They are tough—with excellent resistance to water, most chemicals, weather, grease, corrosive atmospheres.

Coatings based on VINYLITE Brand Resins have the same features as the VINYLITE Resins and Plastics used so widely throughout defense and industry. For more data and proved results, write Dept. XXPB-3 for "BAKELITE and VINYLITE Resin Coatings for Masonry."

Data courtesy:
Plastic Coating Corporation,
Houston, Texas.

Vinylite GRAND **RESINS**

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corp.
UCC
30 East 42nd St., New York 17, N. Y.

If you write maker identify as IEN-4115

PUMP SEALERS

direct from 5-gallon containers

WITH NEW VERSATAL POWER RAM, JR.

This new Versatal pump hoist and follower plate combination is ideal for clean, efficient delivery of heaviest materials, such as putty, caulking, open gear coating, sand base paints—direct from original 5-gallon containers. Illustrated in use with Versatal 5-gallon Pump.

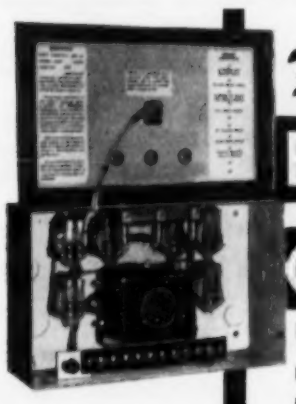
- No waste—no messy transferring of materials!
- Prevents pump failure by keeping pump tube out of dirt and grit!
- Completely cleans and empties original container!
- Follower Plate fits all standard 5-gallon pails—any 11¼" diameter container!

Contact the Alemite Supplier nearest you—or write direct for FREE complete information!

1830 Diversey Parkway
Chicago 14, Illinois

STEWART WARNER SW ALEMITE Versatal SPRAY PUMP EQUIPMENT

If you write maker identify as IEN-4116



Full Automatic

ENGINE CONTROL

DIESEL • GASOLINE • GAS

Dependable Synchro-Start controls provide full automatic starting and stopping according to the operation of any type of pilot switch. Full protection is provided all the time the engine is starting or running. In case of an abnormal condition, such as low oil pressure, overheating, overspeeding, failure to start, etc., the engine will be shut down before any damage can occur and a visual signal will show the exact cause of failure.

Write today for the new Synchro-Start catalog, or see your engine dealer.

Automatic STARTING
Full PROTECTION
Automatic STOPPING
Visual or Audible SIGNALING

SYNCHRO-START PRODUCTS, INC.
Automatic Engine Control Equipment
8151 N. RIDGEWAY AVE. • SKOKIE, ILL.

If you write maker identify as IEN-4117

BETTER PROTECTION FOR BEARING SURFACES

prove it to yourself with this . . .

Free SAMPLE KIT

Use it for

LATHE CENTERS
DIE SET POSTS
MACHINE WAYS
THRUST BEARINGS
CAMS—DIES—TAPS
GRINDING CENTERS
MILLING MACHINES

Let CMD Anti-Scoring Lubricant show you the way to better protection for bearing surfaces. You'll find that it positively prevents scoring, seizing or galling...you get smooth machine operation along with perfect protection. Production goes up and costs come down because workers can operate machines with more speed and convenience. Operators like to use CMD because it is clean, non-toxic, free from unpleasant odors. Send for your free sample kit today.

SEND FOR FREE SAMPLE KIT

Please send, under no obligation to me, Free Sample kit No. 34 containing CMD Lubricants.

Name _____
Company Name _____
Address _____
City _____ State _____

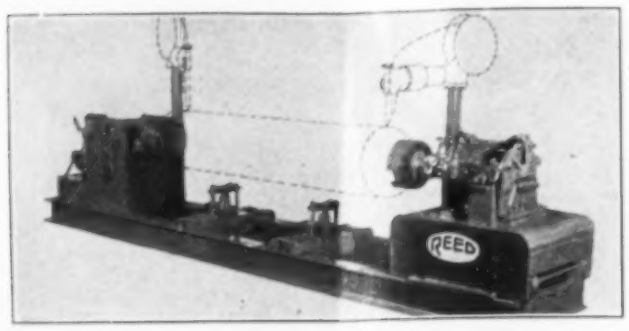
Chicago Manufacturing and Distributing Company
1904 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

If you write maker identify as IEN-4118

WELDING . . Work positioner to assemble and arc weld tank heads

Source: REED ENGINEERING CO.
1005-15 W. Fairview Ave., Carthage, Mo.



Air jacks position and remove work

A tank shell, either seamless or with its longitudinal seam welded, is positioned on two pneumatic jacks on the bed of this new positioner and is brought up into center line position. Heads are applied at the two ends and a lever is operated to press them into position longitudinally. Then the machine heads are rotated while the girth seams are welded.

The positioner is known as Type AW-205. It will take tanks to 24 in. in diameter and to 7 ft. in length. It weighs 2 ton. Head assembling pressure is to 5 ton. Rotating drive includes a 10 to 1 variable speed transmission.

If you write maker identify as IEN-4119

THERMOSTAT . . Sealed assembly closes contacts at preset temperature

Source: FENWAL INC.
216-20 Pleasant St., Ashland, Mass.

Actuates signal circuit

New thermostat, Type E-4, Model 17343-29, has been developed for use as a temperature indicator in a range between 100 and 1,000 deg. F. It is particularly suited for aircraft use.

The contacts close when ambient temperature rises to the preset actuation temperature. The contact circuit rates 3 amp. on 28-volt dc. Assembly is in a stainless steel cylindrical shell with overall dimensions at ⅝ by 5 inches. The mechanism will withstand exposure to minus 100 deg. F. indefinitely and is not affected by high acceleration. It will repeat its action accurately after exposure to 2,000 deg. F.

Identify as IEN-4120

Engine intake vacuum is employed in a new motor-vehicle gage to read in terms of power application, economical drive and deceleration. The gage is made by Sun Electric Corporation. It mounts on a car or truck dash to tell the driver how he is operating at any given moment.

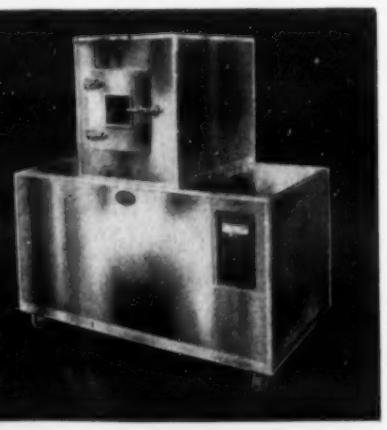
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4121

WEBBER TRADE MARK REGISTERED

TEST CHAMBER

WITH HIGH-TEMPERATURE, LOW-TEMPERATURE AND HUMIDITY



★ This Webber test unit, designed for production and experimental testing, has a temperature range from +250°F., to −100°F. The pull-down to −100°F., is achieved in 45 minutes, and can be cycled from −100°F., to +250°F., in 30 minutes. 95% relative humidity is provided at temperatures between 75°F., and 95°F. Vacuum equipment can be added to simulate high altitudes. The test chamber, provided with a moisture-proof light for illumination, is 4½ cubic feet, 20 inches high, 20 inches wide, 20 inches deep. High and low temperatures are governed by a temperature controller with scale range from −200°F., to +400°F., with a 3 degree control point differential, 1½ degrees plus and minus. The humidity is regulated by a wet and dry bulb controller. Unit size is 60" long, 45" wide, 74" high. Apertures in left side of cabinet provide for electrical cables to energize equipment being tested. Webber offers a complete line of test units for various applications.

Write for more complete information

INDUSTRIAL FREEZER DIVISION
WEBBER APPLIANCE CO., INC.
A-2740 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN-4122

New! Low-Cost! - Wide-Range!

VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

- Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Fixed shaft centers
- Automatic belt alignment
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN-4123

Dept. 24, 3600 McCart Fort Worth, Texas

If you write maker identify as IEN-4124

ELECTROLINE CHOKER SLING FITTING ADJUSTS AUTOMATICALLY TO ANY ANGLE OF PULL

For prolonging wire rope life, ease of attachment and complete safety, this revolutionary Electroline Choker Sling Fitting tops them all. Here's why:

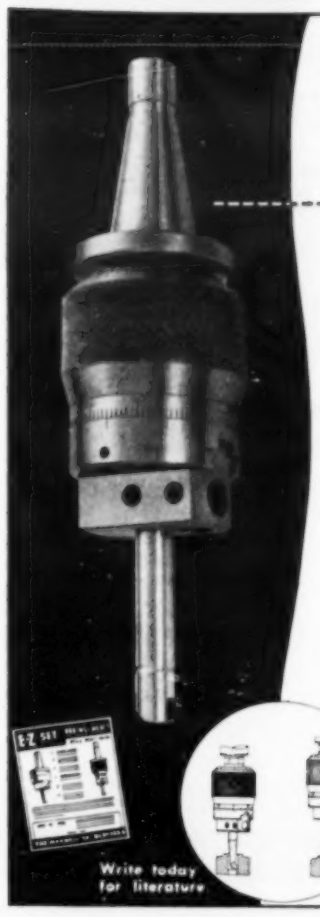
- pivoted members adjust automatically to *any load*—they take the bend, instead of the rope.
- can't disengage under tension, or shock, the fitting always engages the rope.
- easy to apply—goes on in seconds, saves time.
- the Electroline Choker Sling Fitting outlives the rope it protects, reuse it over and over again.

A time and labor saver—in mills, factories, docks, material yards, warehouses: Wherever wire rope choker slings are used.

Send for bulletin "King of Sling Fittings"—which tells all.

Electroline Company
4121 South La Salle Street
CHICAGO 9, ILLINOIS
In Canada: Powerlite Devices, Ltd., Toronto

If you write maker identify as IEN-4125



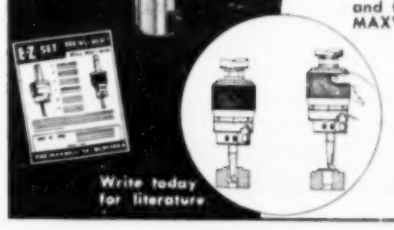
Maxwell

BORING-FACING tools

These famous E-Z Set tools have the most efficient, practical power-facing mechanism ever made! They're compact, universally adaptable and feature unusual capacity.

Adjustments to 0.0001-inch are made easily with widely-spaced direct reading micrometer type dial. Adjusting collar is free-turning on ball bearings. Because shanks are interchangeable, these tools can be used on jig-bore, milling machine, boring mill, radial drill or other machine tool.

For fast, accurate boring and facing, specify MAXWELL E-Z Set! 1149-MC



Write today for literature

THE MAXWELL COMPANY
391 Broadway
Bedford, Ohio

If you write maker identify as IEN-4126

TRY THIS Hapman TUBULAR CONVEYOR QUIZ:

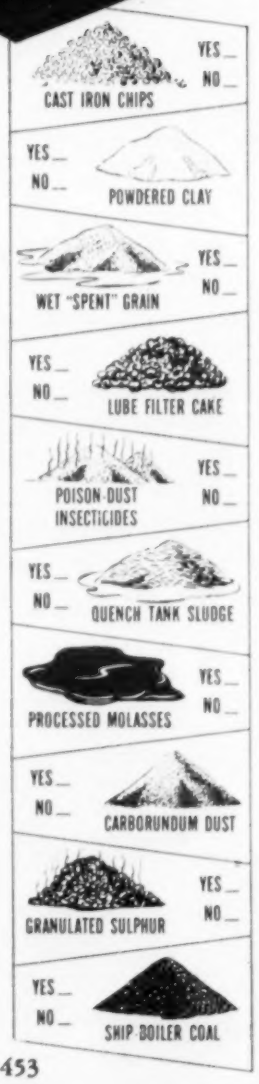
Let's assume you're a Conveyor-Project Engineer employed by Hapman —

QUESTION 1—Which materials in panel would you advise can be efficiently handled by Hapman Tubular Sealed-pin Chain Conveyors?

QUESTION 2—To elevate a granulated chemical 29 ft. above floor, at 2,000 lbs. per hour, what motor would you specify?
1 H.P.____ 2 H.P.____
3 H.P.____ 5 H.P.____

QUESTION 3—A prospect asks, "What is the *outstanding* advantage of a Hapman Tubular Conveyor?" What's your reply?

ANSWERS: 1—All now successfully handled except sticky molasses. 2—One horsepower. 3—Hard to answer. In one case, ability to convey *wet* material is vital; in another the Hapman's air-tight seal keeps moisture or dust *out*—or fumes *in*. Ability to curve around obstacles may be essential. Your best answer: "They cut costs!"



NOW SEND YOUR QUESTIONS!

Write for details and Bulletin IN-453

Hapman CONVEYORS, INC.
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO MICHIGAN

If you write maker identify as IEN-4128

METER . . Rotameter assembly indicates flow rate of air or gas

Source: WAUKEE ENGINEERING CO.
757-61 N. Milwaukee St., Milwaukee 2, Wis.

Ask for Bulletin M

A float and its calibrated weight ride in the tapered tube enclosed in the upper body of this new Flo-Meter. To it is attached a float rod to carry an indicator head in an oil-filled glass tube beneath the body. This tube is equipped with a graduated scale. The oil damps pulsations. It also prevents dirt or foreign matter from obscuring the reading.

Eleven sizes are included in the line for flow rate capacities from 0 to 10 to 1,500 cfh. in connection with specified gases. All sizes can be supplied with the company's built-in control valve located in the top of the housing. The meter is suited particularly for panel mounting. Overall height is under 20 inches. Single and dual assemblies can be supplied. Pipe connections are ¾ and 1¼ inches.

If you write maker identify as IEN-4129

PAINTING . . Transparent lacquer is packaged in pressurized spray can

Source: WESTERN LITHOGRAPH CO.
602-6 E. 2nd St., Los Angeles 54, Calif.

Invisible protection

Splac is a new water resistant plastic spray for use on labels, signs, markers, drawings, artwork, as additional surface protection or as a fixative. The film dries in place to provide resistance to contact with water, salt spray, fungus, greases and oils, acids, finger prints and dirt. It prevents smearing and corrosion. The pressurized spray can holds 11 fluid ounces. Finger pressure operates it.

If you write maker identify as IEN-4130

ASSEMBLING . . Inserting tool to assist in assembling grommets

Source: D. B. RICH MFG. CO.
6215-19 N. Melvina Ave., Chicago 30, Ill.

Reaches in, releases

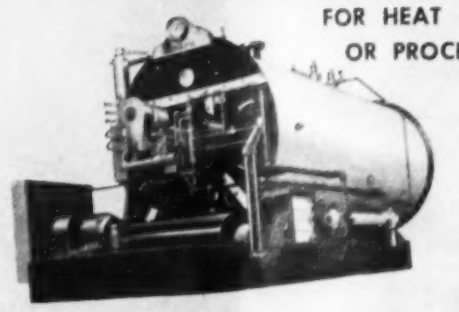
New design is announced by the company for the jaws of its previously developed grommet inserting tool. New flanges hold the grommet firmly in place. The jaw parts also have been hardened to stand up in daily service. A wood handle replaces the previous plastic handle. Each tool is supplied for given application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4131

STEAM

FOR HEAT OR PROCESS



A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 417

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg, Times Sq., New York N. Y.
SUPERIOR STEAM GENERATORS

If you write maker identify as IEN-4132

How much Vacuum do you need?

It is wise to get a vacuum machine large enough the first time, because you will find so many new uses for vacuum in your plant. Spencer Industrial units start at 1½ HP—run up to 100 HP. For the factory offices, Spencer offers sturdy machines as small as ½ HP. Special vacuum tools for any purpose.

The Spencer representative has application data on more than 130 unusual uses — bulletin on request.

PERMANENT INSTALLATION

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-O

If you write maker identify as IEN-4133

PROBLEM:

Obtain higher electrical conductivity without increasing the cross-sectional area of spring blades

SOLUTION:

General Plate provided the solution with BRONCO a composite metal

Increased conductivity of spring blades in a time switch was recently required by a manufacturer of demand meters. Operating requisites were high conductivity, excellent spring properties and small cross-sectional area.

General Plate provided the solution with BRONCO, phosphor bronze double-clad on copper. The phosphor bronze makes an excellent spring member; the copper gives increased conductivity. BRONCO 25/50/25 provides an electrical conductivity of 55% compared with solid copper.

BRONCO permits miniaturization. It permits you to make smaller units because you can reduce spring size without sacrificing conductivity.

No matter what your problem, you can profit by using General Plate Composite Metals. Write for Catalog PR700 today.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
74 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN-4134

Here is Power at the Speed You Need

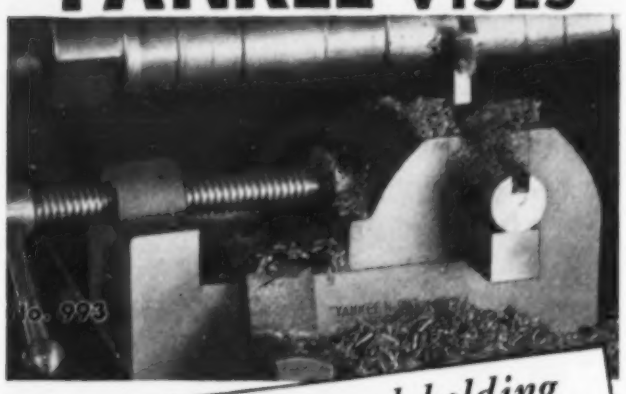
Write today for your copy of this NEW 20-page catalog on SHAFT-KING, the NEW Shaft-Mounted Speed Reducer.

It will pay you to get complete information about SHAFT-KING before you buy any speed reducer. It outperforms all others in its size range. It's made by American, the originator of shaft-mounted speed reducers.

The American Pulley Company
4240 Wissahickon Ave., Philadelphia 29, Pa.
Gentlemen:
☐ Please send your new Shaft-King Catalog
☐ Send name of local Shaft-King distributor
☐ We need help on a slow speed drive problem
Name_____
Firm_____
Address_____
City_____ Zone____ State_____

If you write maker identify as **IEN - 4135**

"YANKEE" VISES



for accurate, work holding
START-TO-FINISH

Every operation is lined up square and true in a "Yankee" Vise. Carefully machined . . . top, bottom, sides and front end to give accurate alignment in any position. Easily made into jig. V-grooved hardened steel block furnished with each "Yankee" Vise. Four sizes . . . 1½", 2", 2¾" and 4" jaw widths. Write for "Yankee" Tool Book.

YANKEE TOOLS NOW PART OF
STANLEY
THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

If you write maker identify as **IEN - 4136**

B.F. Goodrich

TIRE AND WHEEL TW **ANALYSIS speeds materials handling . . . cuts tire costs as much as 50%**

● You can move more goods more efficiently at lower cost when your materials handling equipment rolls on tires of the right type, size, compound and tread design. But choosing the tires calls for a careful analysis of the kinds of equipment you use; where you operate—indoors or outside; your hauling surfaces; the kind of loads carried and any special conditions such as oily floors.

Such an analysis is a specialized, time-consuming job. That's why B. F. Goodrich offers you the Tire and Wheel Analysis Plan. Without charge or obligation, a trained BFG man will study your operations. He'll recommend the right tires for you to use. Perhaps you need a tire for better cushioning, a special cut-resistant compound, a tread design that gives better traction. Perhaps you have tire maintenance problems. Whatever your tire needs, your BFG man's recommendations will be impartial because B. F. Goodrich makes—and BFG retailers sell—a *complete* line of industrial tires.

To get full power from your industrial trucks and maximum service from your tires, send in the coupon or call your BFG retailer. A special TW Analysis Plan is available for manufacturers of industrial hauling equipment.

The B. F. Goodrich Co.
Department TW-446, Akron, Ohio.
Please send me:
☐ *Additional information* on your new Tire and Wheel Analysis Plan
☐ A free copy of your "Industrial Tire Guidebook".

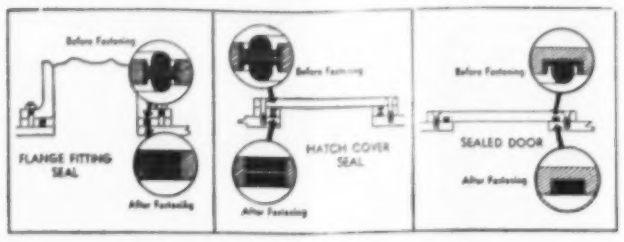
Name _____
Title _____
Company _____
City _____ State _____

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

If you write maker identify as **IEN - 4138**

SEALING . . Rubber gland is bonded in a metal ring or plate

Source: FRANKLIN C. WOLFE CO.
3642-46 Eastham Drive, Culver City, Calif.



Unit shapes and sizes as specified

Gask-O-Seal is a new combination of rubber gland and a flat ring or plate to close a joint in a mechanical assembly. The gland can be employed on one or both faces of the metal member. It projects above the surface until the joint has been tightened. Then it compresses flush with the metal surface.

Cold flow cannot occur under pressure. A tight seal can be made with comparatively light bolt pressure. The sealing member can be used repeatedly. Each time it is tightened in place, the metal limits pull down so the rubber cannot be pinched more on one side than on the other and it cannot be overcompressed in standard service.

If you write maker identify as **IEN - 4139**

SWITCH . . Miniature rotary for use on electronic equipment

Source: STACKPOLE CARBON CO.
1942 Tannery St., St. Marys, Pa.

Bulletin on request

The company announces development of several new miniature switches for attachment to its Type LP and LR variable composition resistors. Greatest diameter is ⅞ inch. Depth is about ¼ in. without the terminals. All of the new designs are Underwriters' approved.

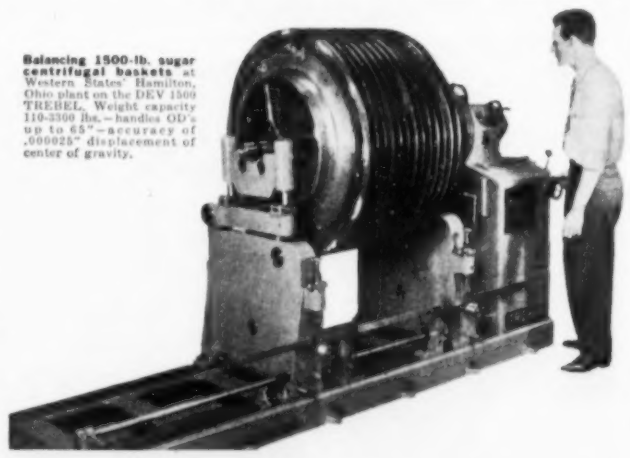
Type A10 is a double-pole single-throw design rating 3 amp. at 125-volt ac. or 1 amp. at 250-volt dc. Type A15 rates 1 amp. at 125-volt ac. or dc. Type A11 is single-pole single-throw design rating 3 amp. at 125-volt dc. or 5 amp. at 125-volt ac. An available dummy terminal on Type A11 provides a means to connect one side of a power line to one side of a power transformer without wire splicing between the two.

Identify as **IEN - 4140**

Thermo-clamp is a little stainless steel spring type clip to hang over the edge of a laboratory beaker. It provides safe support for a thermometer so there is no danger of it slipping down or standing any way but vertical. Glass stirring rods and metal electrodes can be held in place also. Fisher Scientific Company can supply the clip in boxes of one dozen.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4141**



Balancing 1500-lb. sugar centrifugal baskets at Western States' Hamilton, Ohio plant on the DEV 1500 TREBEL. Weight capacity 110-3300 lbs.—handles OD's up to 65"—accuracy of .000025" displacement of center of gravity.

"40% increase in balancing output" at Western States Machine Co.

- **Installation completed in a day.**
- **Operators trained—in production and maintenance—in day and a half.**
- **Balancing output went up 40% on 1500-lb. sugar centrifugal baskets—60% on smaller units!**
- **Know any other dynamic balancing machine that will give such results—so fast?**

The unique TREBEL balancing principle uses mechanical counter vibration to counteract unbalance . . . force is variable as to magnitude and phase and cancels out unbalance vibration in machine . . . indications given in ounce-inches on any work piece without further calibration . . . no special skills required to get fast, accurate results. Hundreds of installations in automotive, aircraft and other mass-production plants—here and abroad—prove it. Prompt delivery. Write for Catalog C.

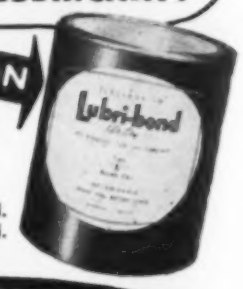
See the TREBEL in operation in New York, Detroit or our Cleveland Service Center.

KURT ORBAN COMPANY, INC.
205 East 42nd St., New York 17 • 4220 Prospect Ave., Cleveland 3 • 19450 James Couzens Highway, Detroit 35
1939 Santa Fe Ave., Los Angeles

If you write maker identify as **IEN - 4142**

Now . . *An Air Dry* BONDED-TO-METAL LUBRICANT!

SPRAY OR BRUSH-ON



Can be applied to iron, steel, aluminum, wood, cork. Lubri-Bond is not affected by water, oils, gasoline and aromatic hydrocarbons.

Type "S" (Sprayable) $6 Qt. $14.50 Gal.
Type "B" (Brush On) $8 Qt. $19.50 Gal.

AEROSOL CONTAINER

Lubri-Bond operates at temperatures from −70° to 300° F. . . . 1 Gal. covers from 300 to 800 sq. ft. Effective under high loads . . . has low coefficient of friction. Aerosol container 12 av. oz. $3.25 ea. $18 per ½ doz.

DRIES SLICK AS A WHISTLE

Lubri-Bond "touch" dries in ½ hour . . . best results obtained after 12 hour Air Dry.

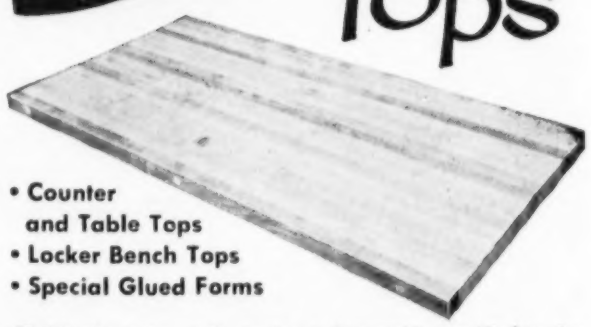
All prices F. O. B. North Hollywood, Calif.

Electrofilm DRY LUBRICATION CORP.
7116 Laurel Canyon Blvd., No. Hollywood, Calif.

If you write maker identify as **IEN - 4143**

HARDWOOD LAMINATED

Bench Tops



- **Counter and Table Tops**
- **Locker Bench Tops**
- **Special Glued Forms**

FROM the drying of the lumber in Sensenich's own kilns* to the cutting, forming and gluing of every hardwood laminated top, the highly trained Sensenich craftsmen play an important part. These skilled workmen use the finest equipment to produce high quality wood parts with thorough efficiency and economy. Remember too, Sensenich is the world's largest producer of wood propellers for personal planes. Sensenich has more than 20 years experience in conditioning, cutting and gluing wood forms to the most exacting standards.

We will be glad to quote on your requirements . . . your request will receive prompt attention.

SENSENICH AIRCRAFT PROPELLERS

*Certified by the United States Air Force

SENSENICH CORPORATION
Dept. IN, Lancaster, Pennsylvania

If you write maker identify as **IEN - 4144**

THE ASSURED *safe* WAY TO HANDLE FLAMMABLE LIQUIDS

EAGLE SAFETY CANS

LISTED AND LABELED BY
UNDERWRITERS' LABORATORIES, INC.

PROTECT PLANT AND PERSONNEL — **MINIMIZE FIRE HAZARD**

Eagle Safety Cans are specially designed and built under rigid specifications to meet all safety regulations for handling, transporting and storing flammable liquids in every industry.

They include many exclusive Eagle features such as: protecting Guard Cap that seals tighter if can is upset; Combination Free-Swing Carry and Operating Handle; Cam-Acting Connecting Arm for easy pouring and body and breast electrically welded together under electronic control—features which provide extra convenience, safety and efficiency.

Be safety wise! Order today from your nearest Eagle Distributor.

EAGLE
MANUFACTURING COMPANY • Wellsburg, West Va.

If you write maker identify as IEN-4145

NEW INDUSTRIAL HUMIDIFIER

BAHNSON TYPE E Self-Contained Unit Humidifier

Requires only water supply and electrical connection

NOTE THESE FEATURES!

- HIGH CAPACITY—Evaporates 3 gallons per hour with ¼ HP motor.
- AUTOMATICALLY CONTROLLED at any desired relative humidity.
- SIMPLE TO INSTALL—Just uncrate and suspend from ceiling.
- ELECTRIC MOTORS for all common current characteristics.
- WATER SUPPLY connection for ¼" tube or ⅛" pipe provided.
- NEEDS NO pump, duct, compressed air, steam, drain or floor space.
- EFFICIENT centrifugal atomization of ordinary city water.
- TWO MODELS, ¼ HP for high capacity, ⅛ HP for small rooms.

FOR COMPLETE HUMIDIFICATION SYSTEMS, FOR BOOSTING, FOR SPOT HUMIDIFICATION, FOR LABORATORIES

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION — Bahnson Company, Engineers and Manufacturers, Winston-Salem, N. C.

If you write maker identify as IEN-4146

For Economy . . . Long Life . . . Dependability

UPTEGRAFF

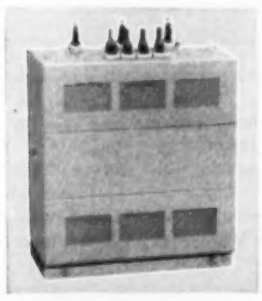
DRY TYPE

Transformers

Installation goes faster and money is saved through the use of Uptegraff Dry Type Transformers. Because they are safe to install anywhere and are light in weight, they do not require special rooms, enclosures or heavy supports. Consequently they can usually be located near the load center, eliminating long expensive bus runs, and improving the performance of the electrical equipment they serve.

POWER

Made in sizes up to 3000 KVA, 15 KV, Uptegraff Dry Type Power Transformers are rugged and dependable. Well-ventilated coils and integrated design of core and coil assembly assure top level performance.

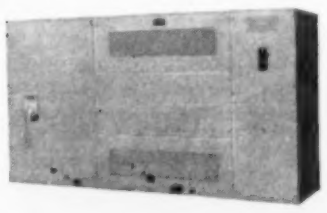


DISTRIBUTION

Uptegraff Dry Type Distribution Transformers can be installed near the load center, with complete safety and greatest economy. Made in all commercial sizes and ratings

SPECIAL DESIGNS for indoor substations

Furnished in standardized sizes and ratings from 112.5 KVA to 2000 KVA, 5 to 15 KV. Enclosed in sturdy, well-ventilated steel enclosure if desired, or as core and coil unit for building into a complete substation assembly.



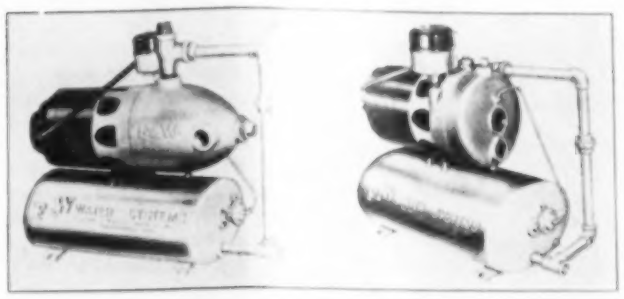
WRITE for complete information on these or other Uptegraff Transformers—Power, Distribution or Specialty.

R. E. Uptegraff Manufacturing Co.
Thomas Street, Scottdale, Penna.

If you write maker identify as IEN-4148

PUMP . . Centrifugal jet design, to 6 gpm. for deep and shallow wells

Source: FLINT & WALLING MFG. CO.
123 Oak St., Kendallville, Ind.



Illustrated data in Catalog 210

Illustrated to the left is assembly with a jet mechanism and centrifugal impeller in a unit head on the driving motor in the company's new design of pump and pressure tank for shallow wells. Companion unit, to the right, places the jet mechanism in the well for pipe connection to the centrifugal pump. In both designs the motor rates ½ hp. for operation on 110-volt ac. Overall dimensions are 20 by 10 by 17 inches. Tank capacity is 4 gallons. Pressure control is standard.

If you write maker identify as IEN-4149

LUBRICATING . . Molybdenum base liquid particularly for oven chains

Source: ALPHA CORP.
177-81 Hamilton Ave., Greenwich, Conn.

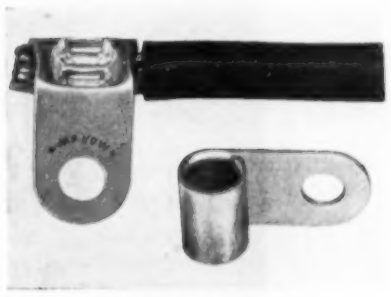
Good in high temperatures

Molykote M-30 is a new dispersion of molybdenum disulfide powder in polyalkylene glycol vehicle. It is suited particularly to lubricate chains operating, as in ovens, at high temperatures. The vehicle carries the lubricating powder into the bearings and then dissipates under heat to leave a film on pins, bushings, rollers. Application is by brush, oil can, or agitator type of automatic lubricator.

If you write maker identify as IEN-4150

CONNECTOR . . Solderless terminal, flag type for No. 8 to No. 4/0 wire

Source: AIRCRAFT-MARINE PRODUCTS INC.
2102 Paxton St., Harrisburg, Pa.



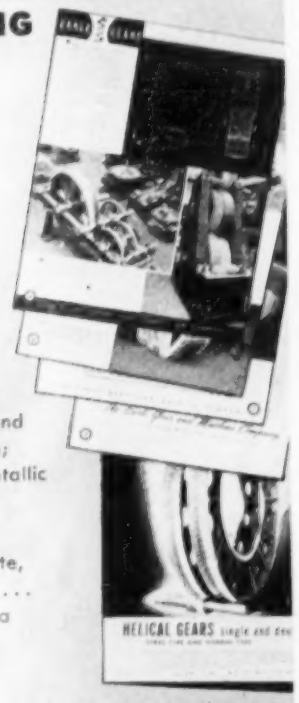
Permanent application

Electro-tinned copper is the material in this new flag type of solderless terminal. Eight terminal sizes are available, each for use with solid, stranded or irregularly shaped wire. Application is by the company's AMP hand-hydraulic tool which makes the Solistrand crimp as shown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4151

BEFORE ORDERING GEARS CHECK THIS CATALOG!



Here's a wealth of gear information condensed into a 20-page, amply illustrated catalog—"EARLE GEARS."

Catalog details include: text material and blueprint dimension drawings of spur, bevel, helical and worm gears; ordering information; helpful formulae; data on non-metallic gears, racks, sheaves, sprockets and special machinery.

You'll want a copy of this complete, concise gear catalog in your files . . . for fingertip reference. Send for a free copy. THE EARLE GEAR & MACHINE CO., 4707 Stenton Avenue, Philadelphia 44, Pa.

EARLE GEARS

It's good business to do business with EARLE!

If you write maker identify as IEN-4152

G-E High-potential Tester Used Without Safety Barrier

- Limited output current minimizes safety hazards when Hi-pot testing.
- Unaffected by internal voltage drop.
- Compact and portable.
- Range—0 to 3500 volts.
- Price—$226.20*.

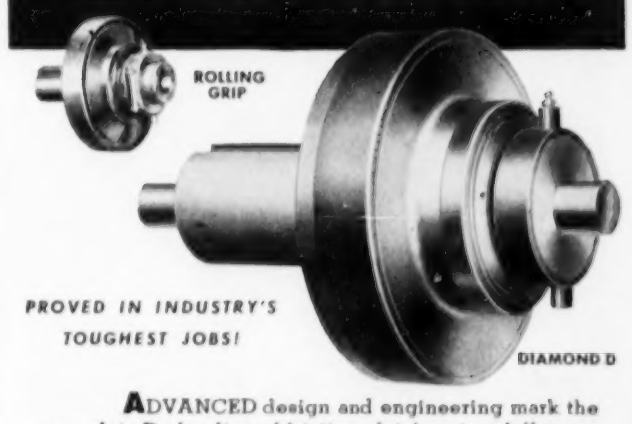
Contact your nearest G-E representative or write Section 605-33, General Electric Company, Schenectady, N.Y.

*Mfgr's suggested retail price.

GENERAL ELECTRIC

If you write maker identify as IEN-4153

DODGE FRICTION CLUTCHES



PROVED IN INDUSTRY'S TOUGHEST JOBS!

ADVANCED design and engineering mark the complete Dodge line of friction clutches, in a full range of sizes, with capacities from 1/3 hp. to 470 hp. Rolling Grip clutches have no toggles, combine ease of control with positive drive. Diamond D clutches, compact, fully enclosed, have stamina for grueling service. For detailed information write

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE of Mishawaka, Ind.

If you write maker identify as IEN-4154

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF

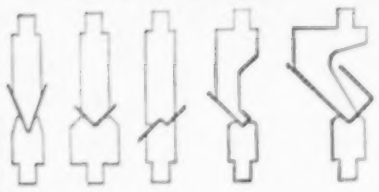
INDUSTRIAL OVENS • SPRAY BOOTHS • PARTS WASHERS • DUST COLLECTORS • HEAT and AIR SYSTEMS

ESTABLISHED 1912
- DETROIT DIVISION
- GRAND RAPIDS DIVISION
- NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

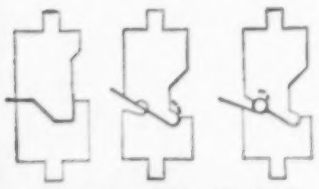
If you write maker identify as IEN-4155

BRAKE DIES



Made from

FORGED CHISEL STEEL BILLETS



Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

Write for estimates on your work and ask for latest literature.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN-4156

keep costs down

with accurate job time records

CALCULAGRAPH

FIGURES ELAPSED TIME ACCURATELY

PRINTS DATE
STARTING TIME
FINISHING TIME
TOTAL ELAPSED TIME

Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION — FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

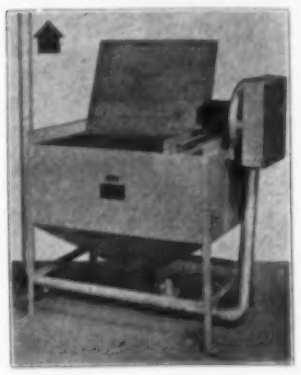
Send complete data on Calculagraph to:

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN-4158

CONVEYING . . Pneumatic equipment elevates granular plastics to hopper

Source: INJECTION MOLDERS SUPPLY CO.
253 Penton Bldg., Cleveland 13, Ohio



Plastic rides on air

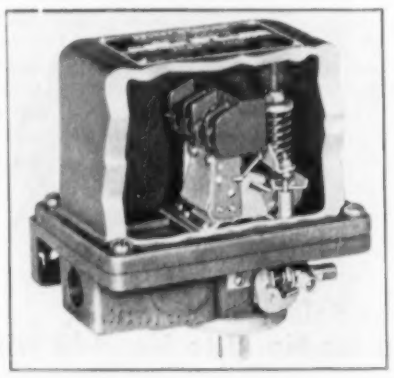
Centrifugal blower mounted on the side of the supply hopper in this new equipment draws air in through a filter panel and delivers it through a venturi nozzle in a flow line below the hopper. Granular plastic, held in the hopper, is delivered to the venturi intake by a motor-driven feeder. It is picked up by the air stream and carried to an overhead cyclone for separation from the air and gravity delivery to an overhead bin supplying a molding machine.

The hopper holds 800 lb. of plastic material. It can be filled from the floor and is covered by a protecting lid. The delivery pipe measures 3 in. in diameter and will carry 20 to 30 lb. of the material per min. to a distance of 20 to 75 ft. in any direction. Floor space measures 54 by 26 inches. List price for 220-volt 60-cycle operation is about $675.

If you write maker identify as IEN-4159

SWITCH . . Pressure operated, for water pump and compressor control

Source: SQUARE D CO.
4039-43 N. Richards St., Milwaukee 12, Wis.



Corrosion resistant

Pressure range is 20 to 80 lb. for application on a water pump and from 40 to 200 lb. for compressor control in this new enclosed snap-acting switch. The enclosure is explosion resistant. It consists of a two-piece casting with machined surfaces between the cover and case to meet Class 1 Group D specifications.

The switch is two-pole double-break design with silver to silver contacts and positive snap action. Operation is by an impregnated fabric, or a special oil resistant diaphragm. The contacts have sufficient capacity to control a 1-hp. circuit on 110 to 550-volt ac. Application is on equipment to operate in explosive atmospheres or where combustible fuels must be handled.

Identify as IEN-4160

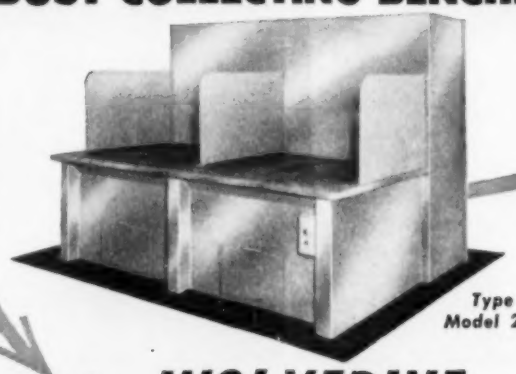
Skid resistance is imparted to multiwall paper bags when they are being made by Union Bag and Paper Corporation. The new bags will not slip out of a pile or slide around while they are being trucked from one location to another. Non-Skid bag is the designation given to the new container.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4161

New DOWN DRAFT

DUST COLLECTING BENCHES



Type B
Model 2-328

by WOLVERINE

Work on open grating working surface is surrounded by downward moving stream of air . . . dust from grinding, polishing or sanding operations pulled downward through grating . . . heavy-duty industrial viscous filters in rear compartment remove dust from air stream and axial flow fan in top of rear compartment discharges air vertically into the room, or when required by local ordinance, discharges to outdoors through duct work. Solves the dust problem where hand grinders are used because of better dust collection due to higher down draft velocity.

Write for descriptive bulletin, Dept. D

WOLVERINE EQUIPMENT CO.
31 MAIN ST., CAMBRIDGE 42, MASS.

If you write maker identify as IEN-4162

Exact, Automatic Formula Control with NEPTUNE METERS

You just push buttons and open the valve. The Auto-Stop meter does the rest . . . automatically shuts off at exact amount of liquid required by your formula. Stops waste, ends spoiled batches, and keeps close tabs on inventories. Handles over 100 industrial liquids. Ask for helpful Bulletin 566-MI.

NEPTUNE METER COMPANY
50 West 50th Street • New York 20, N. Y.

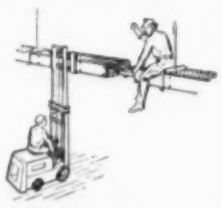
Just reach for the phone!

ATLANTA	Lamar 5016	LOUISVILLE	Jackson 2293
BOSTON	Hancock 6-9123	NEW YORK	Columbus 5-3994
CHICAGO	Sacramento 2-4014	NO. KANSAS CITY	Norclay 3345
DALLAS	Riverside 4904	PHILADELPHIA	Locust 4-3170
DENVER	Main 3221	PORTLAND, ORE.	Broadway 0100
LOS ANGELES	Michigan 5112	SAN FRANCISCO	Garfield 1-8144

If you write maker identify as IEN-4163

Beat Voltage Drop

with NE "LO-LOSS" FEEDER BUSWAY



Tests prove NE "Lo-Loss" Feeder Busway has lowest energy loss per 100 foot run. Power experts agree it's the finest in the field for long runs—either vertical or horizontal—in plants, factories and large office buildings.

You get these BIG features—

- Designed for current transmission up to 4000 amperes at 600 volts or less.
- Easy to install because single bolt connectors are used to join sections. Joints are silver-plated.
- Compact—Requires only 50% of the area needed for conduit and cable installations.
- On vertical installations, exclusive self-contained insulator support frame carries entire weight of bus bars *independent of housing.*
- Simple, accessible bolted connections which allow for quick and easy installation.
- Bus bars insulated with Fibron plastic tape. High dielectric strength and heat resistance.

NE "PLUG-IN" BUSWAY

Plug-in openings, staggered on two sides, permit insertion of devices convenient to equipment.

Listed by Underwriters' Laboratories, Inc.
Write for complete details

EVERYTHING IN WIRING POINTS TO

National Electric Products
PITTSBURGH, PA.
3 Plants • 7 Warehouses • 34 Sales Offices

If you write maker identify as IEN-4165

CANNON PLUGS *for hermetic sealing*

SUB-MINIATURE U Series plugs for miniature switches, relays, transformers, amplifiers and other sealed components have steel shells and Silcan insulation, cable relief and moisture resistant sleeve. Bayonet-lock coupling method. Rated 1700 v. D.C.; 5 a.—Have 3, 6, and 12 contacts—one plug style and two receptacles. Refer to U-2 Bulletin.

GS TYPES (Top, right) and RKH Types (Bottom, right) have fused vitreous insulation providing a true hermetic seal for relays, position indicators, etc. Cadmium finish steel and bleached Iridite shells with Dural coupling nut. Resist thermal shock—300°F. to 600°F.; pressures 200 to 900 psi—specials to 7500 psi. See GS-3 section in AN-8 Bulletin and KH-1 section in K Bulletin.

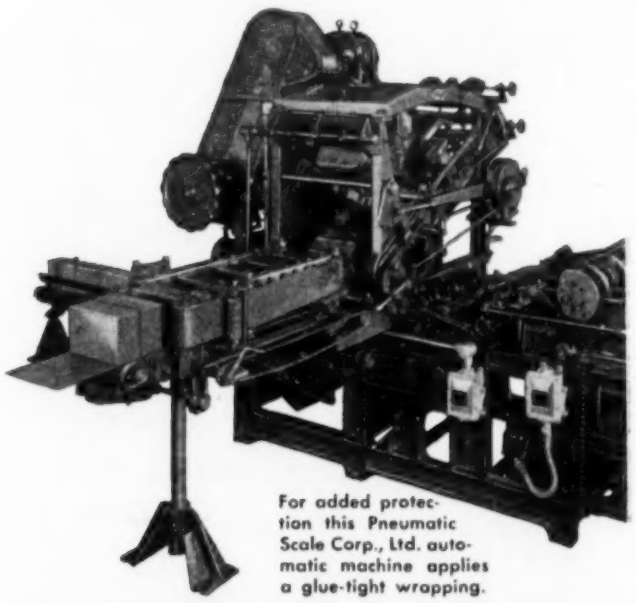
CANNON ELECTRIC

Since 1915

FACTORIES IN LOS ANGELES, TORONTO, NEW HAVEN

Representatives in principal cities. Address inquiries to Cannon Electric Co., Dept. D-112, Los Angeles 31, California.

If you write maker identify as IEN-4166



For added protection this Pneumatic Scale Corp., Ltd. automatic machine applies a glue-tight wrapping.

Dozens of DIAMOND CHAIN

Applications on Pneumatic Packaging, Closure and Glue-Tite Wrapping Machines

● High speed automatic packaging equipment makes possible the economical and safe distribution of many products from source to ultimate user.

It is significant that on the finest types of specialized equipment of this kind made during the past half century, Diamond Roller Chains have been selected for constantly increasing numbers of applications.

Their precision and long-life dependability help materially in assuring trouble-free operating performance. Their flexibility of application helps simplify the machinery design.

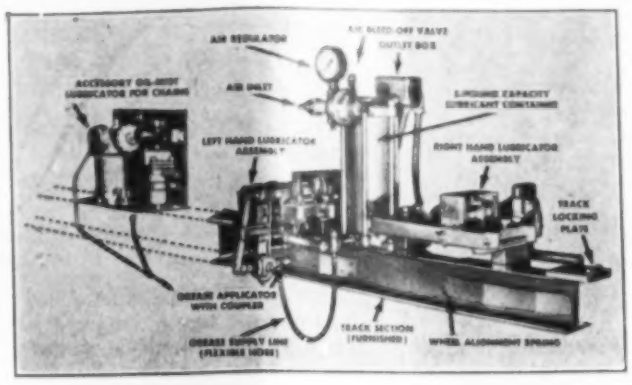
DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

If you write maker identify as IEN-4168

LUBRICATING . . Automatic unit lubricates conveyor trolley bearings

Source: ALEMITE DIV., STEWART-WARNER
1828 Diversey Parkway, Chicago 14, Ill.



Delivers lubricant at pressure to 1,000 pounds

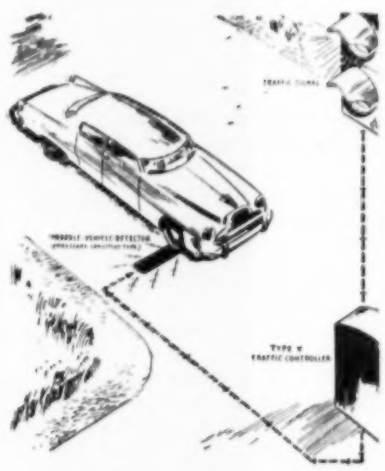
Lubricant container, holding 5 lb. of grease or 2½ qt. of oil, mounts on a 38 or 40-in. section of I-beam conveyor track with two solenoid operated lubricators in this new assembly. The solenoids act, as each pair of wheels "makes contact" in predetermined position, to deliver a "shot" of the lubricant and then immediately release. The container holds sufficient lubricant for 32,000 shots. Assemblies are available on 3, 4 and 6-in. I-beam track sections. The equipment operates satisfactorily with trolley speed at 75 fpm. or less.

Grease is handled from the container by addition of a follower plate and an air line connection, through a regulator, to maintain pressure on the supply. No follower is required when oil is the lubricant. The company is prepared to supply its Oil-Mist lubricator for the conveyor chains.

If you write maker identify as IEN-4169

SIGNALING . . Traffic equipment for control at intersecting streets

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Vehicles initiate action

The company announces addition of an electric-mechanical Type W and an electronic Type V to its previously developed Type F traffic control signaling equipment. Both new designs will detect intersecting traffic flow and allocate the right of way in accordance with relative volumes. The equipment includes vehicle detectors which are placed in all approaches, signal timing equipment that connects into the detector circuit leading to the signal lamps. Interchangeable jack-mounted components assist in initial set-up and in maintenance.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4170

If you write maker identify as IEN-4171

M&M GIANT KEYSEATERS

M & M Giant Keyseaters, built in a wide range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems today.

MITTS & MERRILL

68

1014 South Water • SAGINAW, MICH.

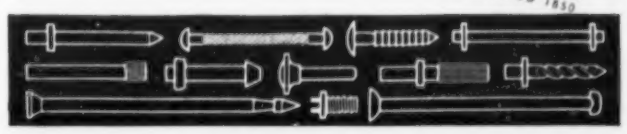
If you write maker identify as IEN-4172

WRITE FOR FREE fastener catalog

A complete, comprehensive handbook on cold-headed nails, rivets, screws and other special fasteners. Check on ways to improve your assembly cost-wise, appearance-wise and from a standpoint of maximum effectiveness at minimum cost. One hundred years of experience are at your service. Write for price quotations or for suggestions on the redesigning of your present assembly.

JOHN HASSALL, INC.
132 Clay Street, Brooklyn 22, New York

Hassall ESTABLISHED 1850



If you write maker identify as IEN-4173

Free! New!

SIGNODE GUIDE TO BETTER PACKAGING and SHIPPING METHODS

Learn how to give your products better protection in transit, at lower costs. Send for this new, 1953 revised edition of the *Signode Guide to Better Packaging and Shipping Methods.* It is filled with usable facts—sizes and weights of steel strapping, tools, accessories, and a complete new line of seals and sealers; methods of applying strapping to containers, and to loads in open and closed cars; tested ways to barricade car doorways to protect all types of packaged and bulk commodities; and the use of automatic power strapping machines.

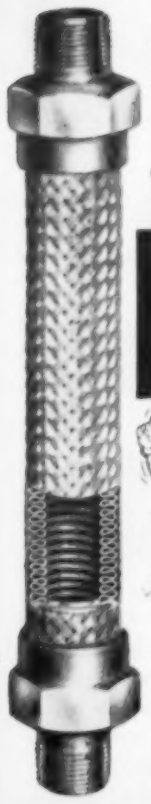
Send for your 1953 copy today!

To get your free copy of the *Signode Guide To Better Packaging and Shipping Methods,* mail this magazine's reply form, or write . . . . .

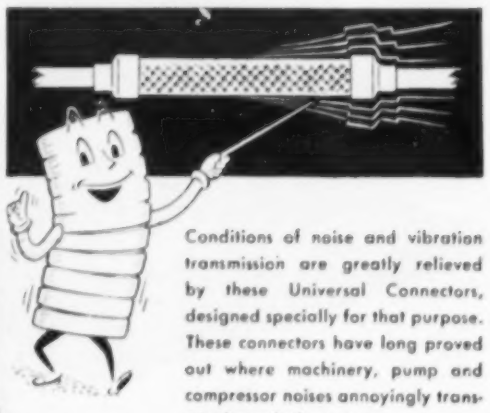
SIGNODE STEEL STRAPPING COMPANY
2611 N. Western Avenue, Chicago 47, Illinois

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as **IEN-4174**



✓ DAMPEN NOISE
✓ ABSORB VIBRATION
with
UNIVERSAL VIBRATION CONNECTORS



Conditions of noise and vibration transmission are greatly relieved by these Universal Connectors, designed specially for that purpose. These connectors have long proved out where machinery, pump and compressor noises annoyingly transmit through the system.

Available in standard lengths with female or male sweat-fittings for attaching to copper tube lines—or with solid male NPT threads for coupling to threaded pipes.

Send us your problem for recommendations. Ask for Catalog U-101 for your file.

UNIVERSAL METAL HOSE CO.
2131 SOUTH KEDZIE AVENUE • CHICAGO 23, ILLINOIS

If you write maker identify as **IEN-4175**

Check the Features that make FRONTIER 40-E

ALUMINUM ALLOY PIPE WRENCHES...

Perfect for PIPE FITTING

Feather Weight

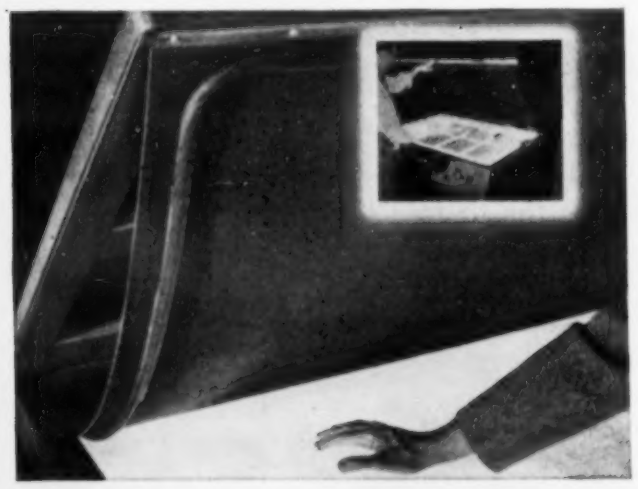
Rugged Strength

- ✓ HALF THE WEIGHT of ordinary wrenches for easier handling and effortless work.
- ✓ EXTRA STRENGTH to meet rough usage through use of rugged Frontier 40-E Aluminum Alloy.
- ✓ JAWS THAT WON'T LET GO because of sturdy steel teeth. Replaceable steel inserts for jaws simplify wrench maintenance.
- ✓ GUARANTEED AGAINST BREAKAGE in normal use. Sizes range from 14" to 48" to fit specific jobs.
- ✓ TAKES HEAVY PRESSURE. Man in lower illustration weighs 215 pounds, is exerting full pressure 40" from wrench jaw! Sizes 14", 18", 24" and 36".

Use the wrench that's expressly designed for pipefitting problems. Insist on FRONTIER Aluminum Pipe Wrenches.
Ask your jobber, or write today to:

FRONTIER BRONZE CORPORATION
4887 Packard Road, Niagara Falls, N. Y.

If you write maker identify as **IEN-4176**



PEERLESS MAGIC HAND

A Totally New Concept in Vacuum Blanket Printers

The big feature is a rubber blanket—the Magic Hand—which replaces the conventional heavy, rigid lid. The result is less print spoilage...faster, simpler multi-print loading...finer quality reproduction.

Why not let a Peerless distributor explain it in detail?
Write us for his name — he's a good man to know.

PEERLESS PHOTO PRODUCTS, INC.
Shoreham, Long Island, N. Y.
Manufacturers of Photocopy Papers and special-purpose Industrial Photocopy Equipment

If you write maker identify as **IEN-4177**

PACKAGING . . Heat sealing machine makes package around small products

Source: PAK-RAPID INC.
528-32 N. 21st St., Philadelphia 30, Pa.

Automatic to order

Two rolls of cellophane or other heat sealing webs are mounted on opposite sides of this new Auto-Pak machine. They feed toward each other over rolls beneath a product table through which small completed products or dry materials are fed. The machine forms the two webs around the product, sealing the sides, bottom and top and then cutting off to deliver the packaged article to a chute.

Speed is to 40 packages per min. when the product is hand-fed. Set-up can be made for packages from 1 by 1 by ½ in. in thickness to 6 by 6 by ½ inch. The machine measures 2 by 3 by 3 ft. and weighs 500 pounds. It is driven by a ¼-hp. motor. A thermostat controls the sealing elements.

If you write maker identify as **IEN-4178**

CUTTING . . High-speed tool bits and cut-off blades are hard and tough

Source: PLEW TOOL CO.
713 S. Line St., Columbia City, Ind.

Price list on request

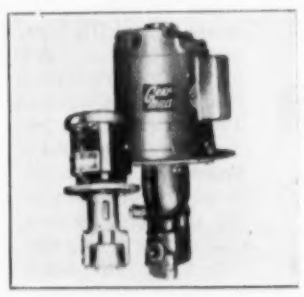
Lucky 7, containing vanadium, and Tuf-Cut, containing molybdenum, have been added to the company's line of high-speed steels, previously described IEN-10999-49. Rockwell hardness tests 64 to 66 on the C scale for both new steels.

Square tool bits are carried in stock in sizes from 3/16 to 1¼ in. in section by 2 to 7 in. in length. Flats are available from ¼ by ½ by 4 in. to 1 by 1½ by 7 inches. The steel can be supplied plain or ground. Straight cut-off blades also are carried in stock in sizes from 1/16 by ½ by 4 in to 5/16 by 1 by 6½ inches. Special tool bits and cut-off blades can be made.

If you write maker identify as **IEN-4179**

PUMP . . Motor driven gear design, 1 to 3 gpm., pressure to 100 pounds

Source: GRAYMILLS CORP.
3709 N. Lincoln Ave., Chicago 13, Ill.



Integral motor

Three sizes, with 1/25 to ½-hp. motors, are included in a new line of gear pumps for coolants, oils, solvents, emulsions. The basic pump design is self-priming. Relief valve, inlet filter and various mounting flange designs can be specified. Installation is in vertical position, either immersed or with the intake pipe leading down to the liquid.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-4180**

the *New* SAF-I-FLEX with Grid Vents and Replaceable Lens

FRAME—Crystal Clear VINYL frame permits wide-angle side vision. Velvet Soft—Fits contour of all faces snugly. Inside edge of frame rolled for more comfort and better fit. Generous grid vents for full ventilation.

LENS—Optilite ® Lens meets Federal Spec. for optical qualities and impact resistance—available in Crystal Clear or Green. Lens quickly and easily replaced—locks securely in frame. Extra large lens area—fits over most styles of personal glasses.

WRITE FOR LITERATURE AND PRICES

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI · BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada: PARMELEE, LTD. Toronto—Montreal

If you write maker identify as **IEN-4181**

METALPREP
Rust Remover and Metal Cleaner for Manual Application

Prep-n-Cote
Iron Phosphate Coating and Metal Cleaner for Industrial Washers

LYFANITE-Z
Zinc Phosphate Coating

PREP-PIK-L
Phosphoric Acid Pickling Process

LYFANITE-A
Corrosion Resistant Coating for Aluminum Alloys

GALVAPREP
for Zinc Coated Metals

ALUMIPREP
Metal Etching Cleaner for Aluminum Alloys

EMULSOPREP
Alkaline Cleaners

SEND FOR DESCRIPTIVE BULLETINS

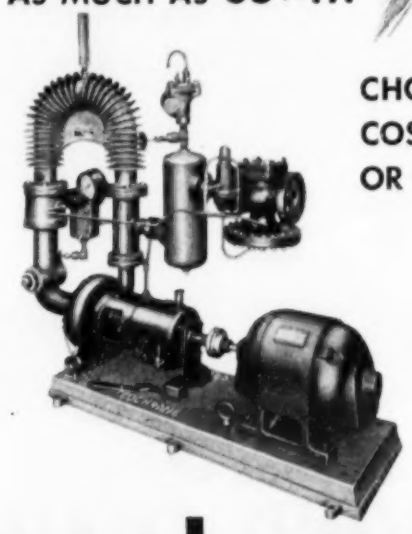
These Products are Backed by **22 YEARS** of Metal Conditioning Experience

NEILSON CHEMICAL CO.
MANUFACTURERS OF METALPREP
2682 Tecumseh Road Windsor, Ontario · 6584 Benson St., Detroit 7, Mich. · 3411 Union Pacific Ave. Los Angeles 23, Calif.

If you write maker identify as **IEN-4182**

"JET" Handling of Condensate

ZOOMS PRODUCTION AS MUCH AS 35%...



CHOPS FUEL COSTS 10% OR MORE

cochrane
C-B
CONDENSATE DRAINAGE CONTROL SYSTEM

Over 1700 installations prove it. In any kind of steam process work, Cochrane's "JET" principle of condensate drainage speeds production, saves fuel cost, improves product quality.

Production can be raised as much as 35% because the Cochrane "JET" unit removes "insulating" layers of condensate—continuously and efficiently—from all types of steam-processing equipment. The Cochrane unit assures faster, more efficient heat transfer—shorter cooking and curing cycles—elimination of cold-starts. Product quality is improved, too, by leveling-out heat fluctuations, eliminating cold-spots, reducing processing time.

Fuel costs drop 10% or more because the Cochrane's C-B unit returns condensate to the boiler with no temperature or pressure reduction. Make-up water costs decline sharply because no water is lost through flashing. Boiler room maintenance costs decrease also, because the Cochrane unit separates entrained gases and air from returned condensate.

Write us today. We'll be glad to show you how a Cochrane C-B High Pressure Condensate Drainage Control System can help you when used with...

Platen Presses	Vulcanizers	Tumblers
Jacketed Kettles	Tube Dryers	Coil Cookers
Dry Cans	Ironers	Drum Dryers
Expellers	Dry Plates	Spray Dryers
Drying Rolls	Unit Heaters	Presses
Dryers	Jacketed Mixers	Digesters

cochrane
corporation
3152 N. 17th Street, Philadelphia 32, Pa.

If you write maker identify as IEN-4184

HARDINGE
ELMIRA, N.Y.

HARDINGE-SJOGREN SPEED Collet Chucks

Increase machine capacity 25% to 40% with the fast action of a handwheel-operated HARDINGE-SJOGREN Speed Collet Chuck. Let your operators get the full use of your tool room lathes, engine lathes and grinders.

Five Sizes: 1", 1⅛", 1⅝", 2⅛", and 3⅛"

For Threaded, Tapered Key-Drive, Cam-Lock, and American Standard Spindles.

HARDINGE COLLETS
For All Lathes and Automatics
Backed by 60 Years of Manufacturing Experience

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN-4185

Whether your nameplate budget is large or small, ANCO can meet your exact specifications at down-to-earth cost. Find out today how easily you can give your product distinctive identification with an ANCO nameplate. Remember ...whether you need 100 or 100,000, you can count on ANCO quality and craftsmanship to match the quality of your product. Send us your design or let us help you create it.

Write for the ANCO catalog today

ANCO CRESTAR

AMERICAN NAME PLATE & MFG. CO.
4246 W. Arthington • Chicago 24, Illinois

If you write maker identify as IEN-4186

Grounds upkeep and maintenance problems are solved quickly, easily and BETTER when you use the powerful 5-HP Gravely Tractor!...21 tools for year-round use with seasonally selected attachments, quick change from job to job in minutes! Only the Gravely does so many jobs so well!

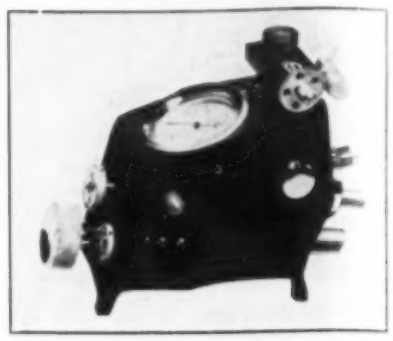
All-Gear Drive, Power Reverse. Institutions-tested for 32 years . . . Ask for your copy of FREE Gravely catalog, "Power vs. Drudgery." Find out how you can do MORE jobs faster and better. Write for it today!

GRAVELY TRACTORS, INC.
Box 440 Dunbar, West Virginia

If you write maker identify as IEN-4187

TESTING . . Indenter and microscope are combined to read metal hardness

Source: C. TENNANT SONS CO.
100 Park Ave., 32nd Floor, New York 17, N. Y.



Made in England

New instrument, known as the Pentrascope, applies a diamond or ball type indenter interchangeably. It makes and measures a minute indentation on the surface of a metal object. The measurement is applied to a table supplied with the instrument to read the metal hardness number. The basic unit is shown in the illustration.

Various types of holding fixture and clamping device are available to position work in front of a turret that carries the ball or diamond indenter in one head and the objective for the microscope in the other. Applied load is read on a gage on the top of the housing. The instrument weighs about 18 lb. and is supplied in a mahogany carrying case that measures 25½ by 6¼ by 9¾ inches.

Available upon request is a 12-page illustrated bulletin describing the instrument in detail, showing drawings of various holding fixtures and application of the instrument under a range of conditions. Application can be made on ferrous or non-ferrous metals with minimum thickness at 0.004 inches. Maximum work size is unlimited. List price of the instrument with a 2-in. work clamp is $820.

If you write maker identify as IEN-4188

DUST COLLECTING . . Precipitator converts dust in gas stream to sludge

Source: JOHNSON-MARCH CORP.
1722-26 Chestnut St., Philadelphia 3, Pa.

Built to order

Dust laden exhaust gases enter this new Model-LP Liquid Precipitator Scrubber at a tangential connection near the base. The gases and dust fill the lower housing to pass upward through a ring of individual wet separator heads. A part of the dust is turned to sludge to drop to a conical hopper at the bottom. The gases and remaining dust pass successively upward through additional separating stages to issue finally through moisture eliminators to a stack connection at the top.

The equipment is available in capacities from 1,500 to 48,000 cfm. Gas temperature is not a factor. Operation is characterized by low draft loss. The sludge is delivered to waste or can be collected in a tank for solids recovery. The water circuit includes a proportioning unit for the company's Compound-M wetting solution to promote the sludge forming action. Equipment on which the collector can be applied includes rotary dryers, cyclones, kilns, mixers.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4189

VLIER

TOGGLE PADS

Simplify Clamping On Uneven Surfaces

PAT. PEND.

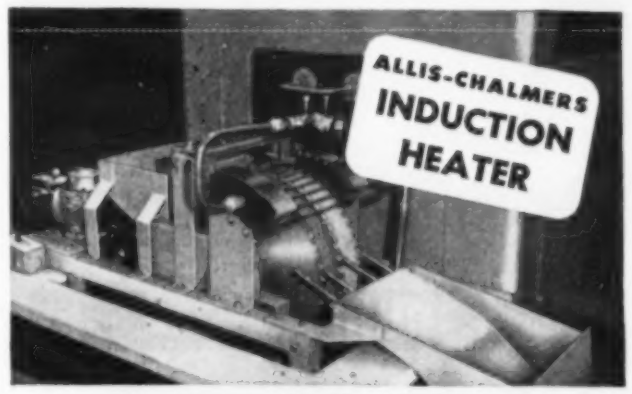
For use with almost any clamp or jack, the 20° (included) angle of movement of these tools permits positive seating on uneven or off-angle surfaces. Each is self-aligning and leveling. Accurate manufacture eliminates "dead spots." Won't loosen during work. Available in five sizes.

VLIER

Send for Catalog No. 56 giving full details.

VLIER ENGINEERING, INC.
4552 BEVERLY BLVD., LOS ANGELES 4, CALIF.
Distributors of Spring Plungers, Torque Thumb Screws, Fixture Keys, Spring Stops.

If you write maker identify as IEN-4190



Hardens Both Ends of 3600 Lifter Rods Per Hour

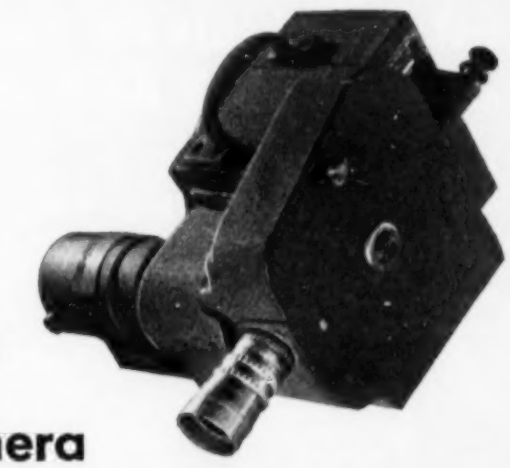
Get high production like this with an Allis-Chalmers induction heater. In this application push rods are picked up from a hopper by a rotating wheel, conveyed through the coil, heated at both ends simultaneously, then oil spray quenched and deposited in a bin.

This same heater can be used for brazing, soldering, annealing, as well as case and through hardening.

High production, plus versatility, plus low operating cost make the Allis-Chalmers induction heater an important time and money saver. Find out what it can do for you. Call your nearby Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3976

ALLIS-CHALMERS

If you write maker identify as IEN-4191



This camera helped General Mills improve a puffing gun

It's a tough job to improve control equipment for a part that is hidden by steam and product—and moves too fast to see.

General Mills engineers were faced with this problem in improving the operation of the "muzzle" cover on their cereal-puffing gun. To slow the event and see just what happens, they used their Kodak High Speed Camera. From the 16mm films it took, they got the quantitative information needed to design proper controls.

The Kodak High Speed Camera takes up to 3200 pictures a second. When the film is projected at normal speed on a standard projector, action is slowed as much as 200 times. An argon timing lamp makes it easy to get an accurate time check. And the films can be shown over and over again, stopped at important frames for detailed study and analysis.

If you have a design or performance problem that's hidden in a blur of speed, it will pay you to investigate the Kodak High Speed Camera. Our engineers will gladly help you determine its suitability to your problem. For further information or a booklet, "Magnifying Time," write to:

Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the Kodak HIGH SPEED Camera

Kodak

If you write maker identify as IEN-4193

Curtis Sets Standards

The meticulous standards set by Curtis, in selection, heat treating, strength, accuracy, tolerance, concentricity and smoothness, surpass the Class I specifications of the U.S.A.F.

CURTIS UNIVERSAL JOINTS

As a result, Curtis standards — and Curtis Universal Joints — are accepted and used by every branch of the Armed Services.

ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability — 14 sizes always in stock; bored or unbored hubs. 6" hub diameter joints or special machining to specifications.

Simplicity—fewer parts, simpler construction.

Government Tests — complete equipment for government tests in our plant.

Not sold through distributors; write direct for free engineering data and price list.

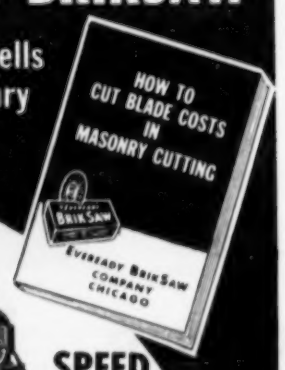
CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Avenue Springfield, Mass.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN-4194

Get More Heats Per Lining with EVEREADY BRIKSAW

This FREE BOOK Tells How to Cut Any Masonry Material in SECONDS!



WET (DUSTLESS) OR DRY CUTTING

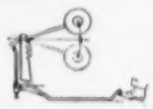
SPEED REPAIR WORK

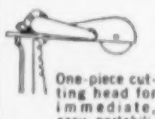
Get that FURNACE—KILN—OR BOILER back in operation fast! Cut **any** Fire Brick in **seconds** with a BRIKSAW . . . and "BRIKSAW CUT" Reline Jobs **last longer** — give more heats.

EXCLUSIVE EVEREADY BRIKSAW FEATURES

"Adjusta-Height" lets cutting head change elevation for materials of varying thickness . . . adjusts in 4 seconds.

Swing the cutting head to any desired position with this "Toe-Matic" foot treadle. Fast shift from one type of masonry material to another.





One-piece cutting head for immediate, easy portability. Off the saw frame in 21 seconds flat!

Automatic pressure control for the blade. Adjusts cutting pressure to hardness or softness of material.

EVEREADY
- **ABRASIVE**
- **DIAMOND**
- **"TUFFIE"**

BLADES

Your local Distributor carries EVEREADY Blades to best cut any masonry or fire brick material . . . for every make and model Masonry Saw. Order your EVEREADY Blades from local stocks.

CUT Special Shapes—
SKEWS—SPLITS—ANGLES
from Standard Shapes

Any shape, any size . . . **cut in SECONDS** from Standard Refractory stocks or from cutts you formerly discarded. Cut to precision sizes . . . do a better, faster job of relining. **Save** Material . . . **Save** Time . . . **Save** Money!

WRITE FOR NAME OF NEAREST DEALER

There's an **EVEREADY** DISTRIBUTOR IN YOUR LOCALITY Write for His Name Now!

EVEREADY BRIKSAW COMPANY
1509A S. Michigan Blvd., Chicago 5, Ill.

Send without obligation of any kind FREE Booklet on "HOW TO CUT BLADE COSTS IN MASONRY CUTTING"

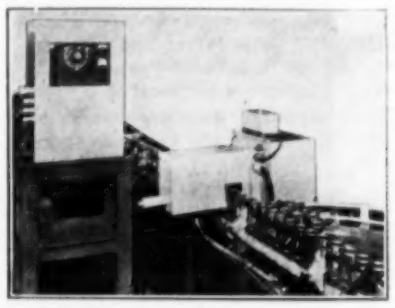
NAME_____
ADDRESS_____
CITY_____ STATE_____
No. EI-13

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN-4196

Tiny crystals of cadmium sulfide, about the size of a match head, are positioned on one side of a conveyor line carrying filled containers. On the opposite side is an 80,000-volt X-ray tube. Both are at correct fill height so the material in the container shields the crystal if the container has been filled. The crystal receives a "jolt" from the tube if the fill height is low, as much as 1/64 in. in a beer can, and equipment is actuated to eject the faulty container from the line. General Electric, X-Ray Department, "grows" the crystals and builds the detecting equipment. It applies on liquids and free flowing materials.

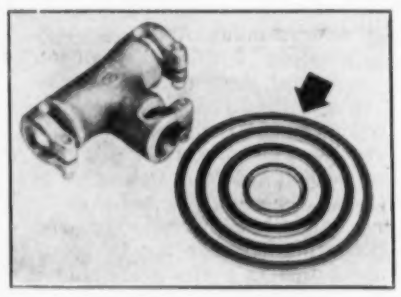


Identify as IEN-4197

Hypertap is a solid lubricant supplied in sticks to assist in blind hole tapping. Destiny Products Company makes them in diameters to 1 in. and in length to 7½ inches. You drill the tap hole, clean out the chips and drop in a piece of the lubricant. Movement of the tap into the hole, to cut the threads, extrudes the lubricant. It picks up the thread chips and carries them out of the hole. No need to retract the tap for chip cleaning, no time lost.

Identify as IEN-4198

Each Quikupl stainless steel threadless pipe fitting, previously described IEN-7153-52, employs Neoprene gaskets riding in recesses to seal the connections when the unthreaded pipe is inserted and brought up against gaging shoulders. The ring type gasket is a product of Minnesota Rubber and Gasket Company by injection molding. It is indicated by the arrow in a current range of sizes.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4199

ASTM Fuel Oil Tests

Now Safer—More Convenient with *new*

FISHER/TAG

PENSKY-MARTENS CLOSED CUP TESTERS

Large industrial users and distributors of fuel oil will find greater convenience and safety in determining fuel-oil flash points with this completely re-designed closed cup tester.

The heater is now an integral part of the standard assembly which makes it easier to move from one spot to another. The newly designed cup is carefully machined to ASTM specifications and is a forging to withstand thermal shock more efficiently . . . cannot tip when set on laboratory bench. Both electric and gas models are available with electric motors.

FISHER SCIENTIFIC
717 FORBES ST. PITTSBURGH 19, PA.

If you write maker identify as IEN-4200

Supreme in its field, this mobile monster moved from drawing board to proving ground in record breaking time. Once there, it proceeded to shatter performance records too . . . a real tribute to the superb engineering and production power of the Army Ordnance Corps and the Chrysler Corporation.

BAY STATE abrasive products, among others, were used to accomplish this feat. In particular, BAYFLEX reinforced disc-wheels were used by many Chrysler suppliers for grinding "miles" of tank-hull welds.

BAY STATE is proud to play its part in this modern miracle of stepped-up production. We salute the Patton 48 and the forward-moving program of Army Ordnance and Chrysler.

BAY STATE

BAY STATE ABRASIVE PRODUCTS CO., Westboro, Mass.
Branch Offices and Warehouses — Chicago, Cleveland, Detroit, Pittsburgh
Distributors — All Principal Cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Brantford, Ontario

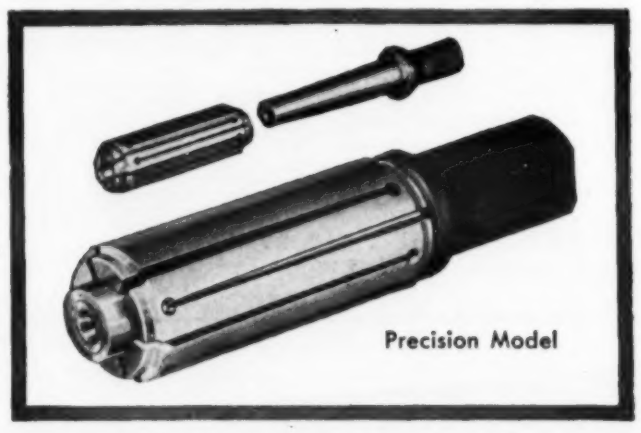
ALL TYPES OF QUALITY PRODUCTS FOR GRINDING

If you write maker identify as IEN-4201

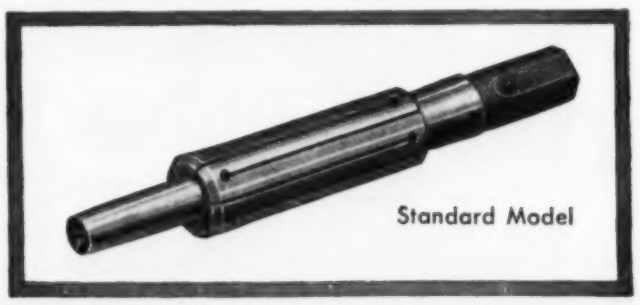
CHAMPION
E-X-P-A-N-D-I-N-G MANDRELS

work savers—cost cutters job speeders—in any shop

Save the time spent tooling up solid mandrels. CHAMPION mandrels automatically expand to exact, positive, concentric fit as the flexible sleeve is moved along the tapered arbor. Work is quickly set up; easily taken down. Your production costs are cut, whether the job calls for machining only one piece or ten thousand pieces.



Precision Model positively guaranteed for precision grinding, turning and milling operations. Ideal where accuracy and time-saving are of utmost importance. Available in standard sizes from ½" through 3" diameter, graduated by 1/16". Arbor built for heavy loads. Sleeve has range of .010", from .003" under to .007" over nominal size. Positive stop at maximum size prevents overstrain. Holds tolerances of .0002" run out. Withstands hardest wear; permanent accuracy is assured.



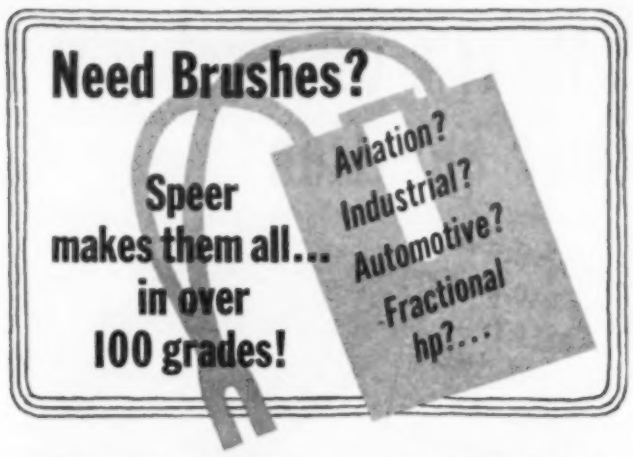
Standard Model used throughout the world. Standard tool room equipment in all phases of modern industry. A set of twelve will completely and accurately fill any hole from ½" to 7" diameter—replace hundreds of solid mandrels costing many times as much. Show negligible wear after years of use. Maintain close tolerances; handle material of any length bore, hard or soft metals, from thin tubes and bushings to heavy castings and forgings.

CHAMPION Expanding Mandrels can be made in special shapes and sizes to fit any specification. Quotations on request.

When writing, please address Dept. 200.

WESTERN TOOL & MFG. CO., INC.
SPRINGFIELD, OHIO

If you write maker identify as **IEN - 4203**



Speer makes carbon-graphite, graphite, electro-graphitic and metal-graphite brushes in over 100 different grades to suit your needs.

Whatever your brush specifications . . . rectangular or round . . . beveled, concave or convex . . . tamped, riveted or bolted shunts . . . standard, flag, pressed tube terminals . . . Speer can supply application-tested brushes that will give you:

Even Wear • Improved Commutation • Reduced Vibration • Longer Brush Life

A Speer application-tested brush for every use:
motors • ignition systems
power plants
generators • rotary
convertors • power tools
starters • subways
accounting machines
windshield wipers
Diesel locomotives
household appliances

Write today for complete information.

SPEER Carbon Co.
St. Marys, Pennsylvania
DIVISIONS:
Speer Resistor • Jeffers Electronics
International Graphite & Electrode

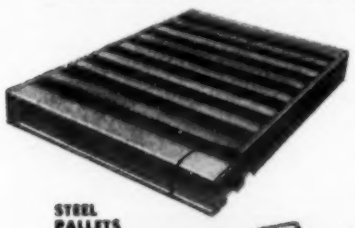
If you write maker identify as **IEN - 4204**

For STURDIEST CONSTRUCTION
. . . SAFEST PERFORMANCE
. . . LONG LIFE SERVICE

Specify **PHILLIPS**

MATERIALS HANDLING EQUIPMENT

When you specify Phillips Materials Handling Equipment . . . you choose the best . . . because equipment by Phillips is built for a long life of dependable, safe and economical service. A few of these sturdy products are illustrated . . . many others are available to meet any materials handling problem. Write today for bulletins on Phillips materials handling equipment for your requirements.



STEEL PALLETS

PHIL-DUMP, JR. USED WITH FORK LIFT TRUCK

MODEL DP-3B SUPER "PHIL-DUMP" TRAILER

MODEL B-20 COLLAPSIBLE "PHIL-BOX"

INDUSTRIAL TRAILERS

SKID DUMPS

Manufacturers Since 1863

PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

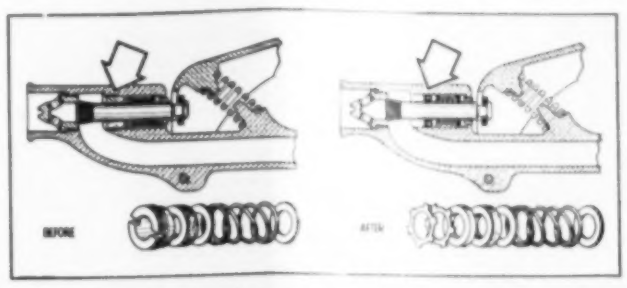
MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—*Continued*

Identify as **IEN - 4206**

Simplified assembly results from the use of two Waldes Kohinoor Truarc retaining rings and a washer in design of a



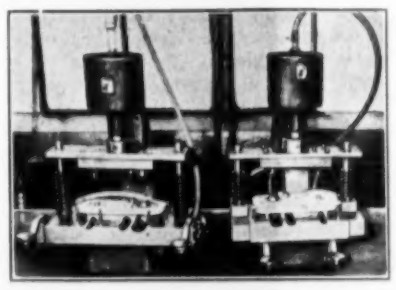
fire extinguisher nozzle. The rings replace a stainless-steel threaded plug. They are pressed into place in the plain housing bore. They bite into the bore wall and hold the felt washers compressed on the spring that provides stem sealing pressure. Production was increased from 25 to 60 units per hour. A saving of 6 cents was made on each unit.

Identify as **IEN - 4207**

Nitro glycerine that has contaminated tools and equipment can be evaporated safely or decomposed by exposure to infra-red heat, according to Corona Manufacturing Company. It has built and installed an oven employing infra-red elements for the purpose. It is equipped with automatic safeguards for the operating cycle. Its heating chamber is 36 by 60 by 36 inches.

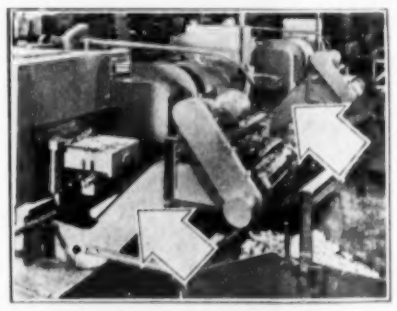
Identify as **IEN - 4208**

Three holes in a gear box and three in a cover plate are sized simultaneously by forcing balls through the holes while the work pieces are in place in pneumatic fixtures. The action is provided by Mead Specialties Company Model 122 pneumatic cylinders operating spring backed plates carrying pins to contact the balls. The balls pass through the work, come to rest to be used on next piece.



Identify as **IEN - 4209**

Chips are conveyed to disposal carriers as soon as they are formed in a line of automatic lathes. The job is done by a special design of May-Fran Engineering Company's Chip-Tote metal flight conveyor. The unit extends into the lathe to ride under the tools. Chips drop down, are carried out and dumped into waiting buckets. Arrows in the illustration point to two of the conveyors installed in a production setup.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4210**

FOTO-FLO* MODEL C
PHOTO-COPYING MACHINE
New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 53-36 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK
Branch Offices in Principal Cities
Photocopy Papers • Photo copying Machines • Photographic Papers

If you write maker identify as **IEN - 4211**

UNIVERSAL DRILL BUSHINGS establish new standards of high quality

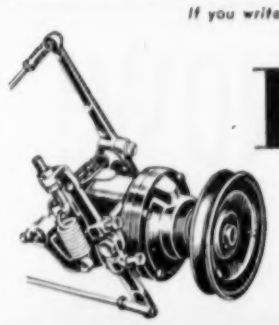
Universal Drill Bushings, produced at the big, modern plant of the Universal Engineering Company, have been first in industry for more than 25 years. They are accurately machined with superhoned bores from the finest quality steel and carefully inspected to insure maximum efficiency and extremely long life. Write today for complete information.

The modern home of finer production tools

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

156-A

If you write maker identify as **IEN - 4212**



now

ONE GOVERNOR ONE MODEL . . . for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

● Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.

● Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

List Price **$39.50**
Pulley Extra 4" $1.70 5" $1.75

Write for Complete Information

DEALERSHIPS AVAILABLE

THE PIERCE GOVERNOR COMPANY, INC.
1636 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as **IEN - 4213**

SPRAY NOZZLES

. . . FOR LOWER COST

Spray Nozzles alone can often materially reduce spraying costs. Spraying Systems Co. has proved this again and again. Write for Catalogs 22 and 23 . . . and see for yourself.

CLIP AND MAIL

SPRAYING SYSTEMS CO.
3208 Randolph Street • Bellwood, Illinois

☐ Send me Catalog No. 22 ☐ Send me Catalog No. 23

Name_____
Company Name_____
Address_____
City_____ State_____

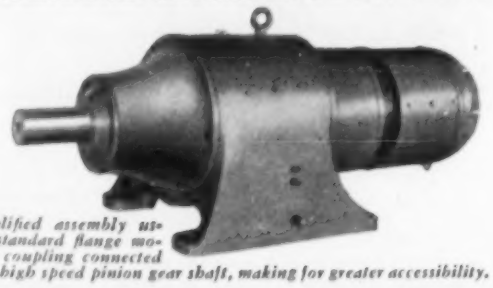
If you write maker identify as IEN - 4214

D.O.James

Established 1888

MOTORIZED GEAR SPEED REDUCERS

A CENTRALLY BALANCED DRIVE WITH GREAT EMERGENCY STRENGTH



Simplified assembly using standard flange motors, coupling connected with high speed pinion gear shaft, making for greater accessibility.

SINCE 1906 . . . When the first D.O.James Motorized Gear Speed Reducer was built . . . We have improved the design and manufacture of Motorized Gear Reducers, maintaining in them the same high quality of manufacture as our other standard Gear Speed Reducers.

The many advantages of D.O.James Motorized Gear Speed Reducers and their continued proven performance for many years make them a leading choice with power transmission designers and engineers.

D.O.JAMES GEAR MANUFACTURING CO.
MAKERS OF ALL TYPES OF GEARS AND GEAR SPEED REDUCERS
1140 WEST MONROE STREET, CHICAGO, U. S. A.

If you write maker identify as IEN - 4215

STOP COSTLY WATER HAMMER NOW!

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

WILLIAMS-HAGER Flanged Silent Check Valves are the economical and dependable answer to troublesome and costly "water hammer" in all pump lines. These valves operate effectively in horizontal, vertical, upside down or angular positions—under any service or pressure condition.

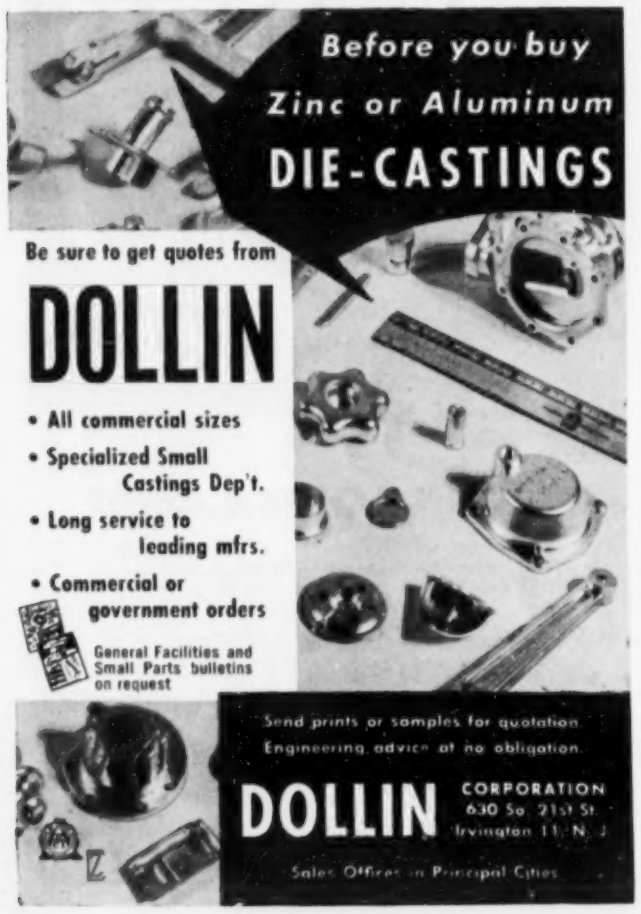
WRITE FOR BULLETIN WH-851

This bulletin gives complete details on the cause, effect and control of damaging "Water Hammer." Use the coupon below for prompt delivery of your copy.

CHECK VALVES

THE WILLIAMS GAUGE CO.
2900 Pennsylvania Ave. Pittsburgh 33, Pa.

If you write maker identify as IEN - 4216



If you write maker identify as IEN - 4217

STATIC ELIMINATOR . . Head, plate and chain for safe equipment grounding

Source: WALTER G. LEGGE CO.
101 Park Ave., Rm. 338, No. Wing, New York 17, N.Y.

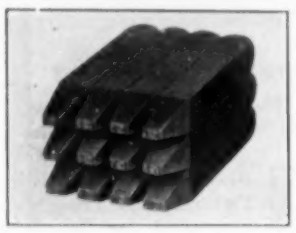
Grounding assured

Safestat trade names a new resistor equipped head weighing 3 lb. to provide point bearing contact with a 7 by 7-in. floor plate. The head is suspended by a chain so it stands at an angle that will move the plate along with it if it is moved. The plate makes sufficient surface contact with the floor to safely ground any static charge that may travel down from the machine through the chain and head. The chain can be taken apart in 2-ft. lengths for convenient attachment to the machine.

If you write maker identify as IEN - 4218

MARKING . . Steel stamps for month and year by symbol letter

Source: PARKER STAMP WORKS INC.
702 Franklin Ave., Hartford 1, Conn.



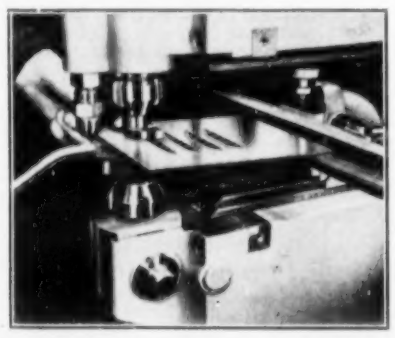
Engraved

Twelve individual stamps are included in a new set of steel units to mark the month by number and the year by letter symbol. Three character sizes measure 1/16, 1/8 and 3/16 in. in height. Other sizes can be specified.

If you write maker identify as IEN - 4219

SHEARING . . Louver tooling for company's motor driven machine

Source: AMERICAN PULLMAX CO.
2453-57 N. Sheffield Ave., Chicago 14, Ill.



Nine machine sizes

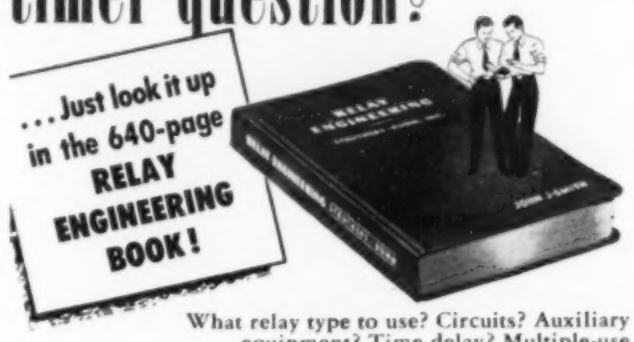
Louvers can be cut to required length in steel and non-ferrous metal sheet by means of new tooling the company has developed for its motor driven shearing machine, previously described IEN-3215-52. The tooling includes a female die in the lower section that can be moved to the right or left to form the end of the louver after the required amount of straight cut has been completed by the machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4220

If you write maker identify as IEN - 4221

What's your relay or timer question?



What relay type to use? Circuits? Auxiliary equipment? Time delay? Multiple-use control lines? Sequence operation? Your questions on these and dozens of other relay-timer subjects are fully answered in the famous Struthers-Dunn Relay Engineering Book. Pocket size. Over 18,000 in use. Now in 6th printing. PRICE $3.00.

STRUTHERS-DUNN

5,348 Relay Types

STRUTHERS-DUNN, INC., 150 N. 13th St., Phila. 7, Pa.

BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI
CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES
MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH
ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

If you write maker identify as IEN - 4222

DON'T FORGET

THE WORLD'S MOST USEFUL HAND TOOL!

Locks to Work With TON-GRIP!

You need FEWER tools—get far more done—when you use a Vise-Grip wrench! Locks to any size work with Ton-Grip. Won't slip! Holds, twists, turns, bends, cuts, ratchets. Really a super-pliers, adjustable wrench, pipe wrench, toggle-press and vise—all in one! Fastest, most USED tool in every shop! 7" and 10", cutter optional. See your supplier!

Manufactured Only By
PETERSEN MFG. CO., INC.
Dept. IE-4 DeWitt, Nebr.

If you write maker identify as IEN - 4223

Hardness testing made *Easy!*

Save Time!
Test Accurately!

Ames PORTABLE HARDNESS TESTERS

Frequent hardness testing of metals before and during fabrication and after heat treating is essential today for best results.

Ames Portable Hardness Testers answer the need for a light weight, accurate, dependable tester that may be carried to the work for on-the-job testing. They are easy to use, require no skill, and get speedy, accurate tests wherever the work may be—no delays, no cutting off specimens—no waiting for laboratory tests.

Besides testing flats, rounds, tubing, etc. Ames Hardness Testers make tests that otherwise would be impossible, such as large gears, knives, saws, blades, struts, frames and assembled parts. Thousands are in use paying for themselves over and over again in time and materials saved.

Send for literature or ask for demonstration in your plant. No obligation.

AMES PRECISION MACHINE WORKS
Makers of Ames Precision Lathes and Bench Millers
Waltham 54, Massachusetts

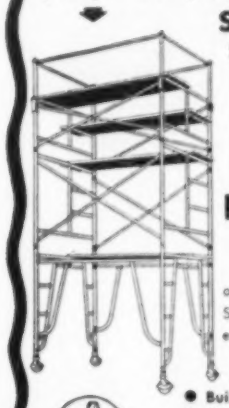
If you write maker identify as IEN-4224

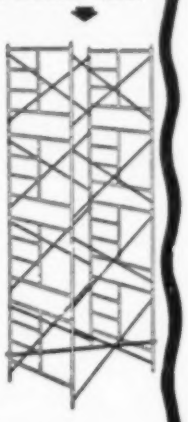
WORLD'S FASTEST, SAFEST SCAFFOLDING

WACO

ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!





BIG WACO FEATURES!

Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.

- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor today for a free demonstration. Distributors in all principal U.S. and Canadian cities.

Write for free file folder

SALES RENTALS

WILSON-ALBRECHT CO., INC.
DEPT. R, 3565 WOODDALE AVE.
MINNEAPOLIS 16, MINN.

WACO

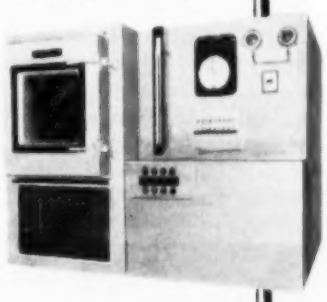
If you write maker identify as IEN-4225

temperatures! atmospheres! pressures!

For ACCURACY TEST WITH Tenney

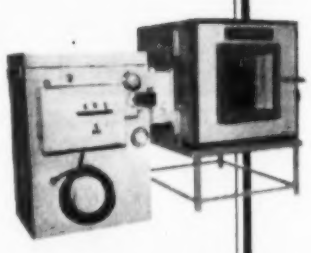
. . . for Tenney Test Chambers are precision-engineered for maximum efficiency and can be designed to simulate the complete range of temperature, atmospheric or pressure conditions found anywhere on earth—or above it to altitudes of 120,000 ft. plus! They attain sub-zero temperatures quickly, maintain them efficiently and provide full instrumentation for accurate evaluation of complete test data.

TENNEYZPHERE ALTITUDE CHAMBERS



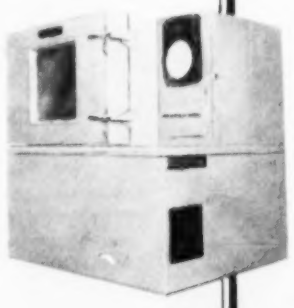
Designed to withstand atmospheric pressure and to simulate global conditions of pressures, temperatures and humidities. Altitudes from sea level to approx. 80,000 ft. Temperature range from plus 200°F to minus 100°F. Also simulates desired (20% to 95%) relative humidity.

TENNEY SERVO UNIT



Portable air conditioning unit which may easily be attached to various types of laboratory enclosures—impact machines; tension machines; torsion testers; cold boxes and similar equipment. Through its use, articles undergoing testing, aging or weathering can be subjected to wide variations of humidity, heat and cold. Photo shows servo attached to companion chamber.

TENNEY TEMPERATURE AND HUMIDITY CHAMBER



Designed for positive control of temperature, humidity and air circulation. Permits the accurate checking of physical quality, fragility, tension and other factors. Also built to incorporate extreme low temperatures, to —100°F.

TENNEY SUB-ARCTIC INDUSTRIAL CABINETS

Designed for low-temperature testing of metals, radios, instruments, plastics, liquids, chemicals and pharmaceuticals. Temperature ranges of —40°F, —60°F, —95°F and —150°F are standard for each size.

For further information on these and other Tenney test equipment, write to Tenney Engineering, Inc., Dept. C, 26 Ave. B, Newark 5, N. J.
Los Angeles Representative: GEORGE THORSON & CO.
Chicago Representative: SPARTAN ENGINEERING CO.

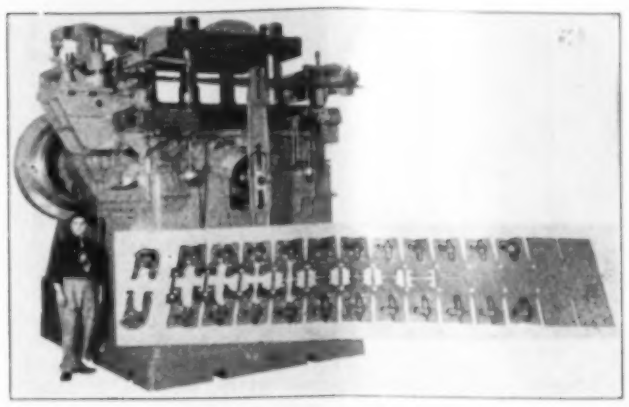
Tenney
ENGINEERING, INCORPORATED
Engineers and Manufacturers of Automatic Environmental Test Equipment

8470

If you write maker identify as IEN-4227

PRESS . . Motor-driven automatic rates 350 ton, for quantity production

Source: HENRY & WRIGHT
758-62 Windsor St., Hartford 1, Conn.



Work feeds from right to left

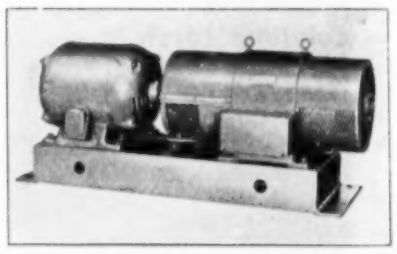
Stroke is standard at 6 in., can be specified to 16 in. in this new 350-ton Dieing machine. Overall bed length is 85 in. and length of the upper crosshead is 67 inches. Standard opening in the bed is 18 by 54 inches. Maximum coil or strip stock width that the roll feed will handle is 25 inches. Standard feed length is any adjustable amount to 13 in. with greater feed to 30 in. when specified. Distance from die bed to the upper crosshead with the stroke down and adjustment up is 20 inches. Adjustment measures 4 inches. The drive calls for a 50-hp. motor.

Typical application is exampled by a steel gear housing part required in right and left-hand pairs. The part is made in a progressive 13-station die set at the rate of 60 complete pairs per minute. The steel in this part is 0.065 in. in thickness. The press will handle steel to $^{11}/_{32}$ inch.

If you write maker identify as IEN-4228

GENERATOR . . Motor-driven ac., normal ac. and battery dc. inputs

Source: BOGUE ELECTRIC MFG. CO.
45 Iowa Ave., Paterson 3, N. J.



It keeps on running

Failure in normal ac. power supply to operate the ac. motor driving this new generator results in instant opening of the ac. circuit. This is accompanied by closing of a battery circuit to the dc. motor that makes up an integral part of the assembly and rotates with the generator until it is needed. The arrangement prevents even momentary interruption to the output.

The equipment represents further development of the unit previously described IEN-6354-52. It extends the line capacity to cover a range from 1 to 50 kw. with a total of 20 models. An auxiliary engine-driven generator can be supplied with an interval timer that will cut it into the output line after a predetermined interval of operation on the batteries. This generator is employed when the normal circuit may be out for a period greater than the batteries can supply.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4229

For Precision Flatness and Finish... on Metals, Ceramics, Quartz and Plastics...

USE A CRANE LAPMASTER

With a Lapmaster you can lap different parts in one cycle—lap a wide range of parts of different materials in short or moderate production—lap identical parts at tremendous production rates and maintain flatness to one light band (.0000116"), surface finish to 2 or 3 RMS. *Production lapping may be the solution to your problem. Get all the facts.*

Full facts on Lapmaster production lapping—Flatness interpretations available in two illustrated booklets. They are yours for the asking.

CRANE PACKING COMPANY
LAPMASTER DIVISION
1815 CUYLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN-4230

You can cut and join this floor plate to any shape you need,
And Multigrip will fabricate with utmost ease and speed;
For Multigrip is so designed to make the sections match
Placed end to end, or side to side, or in a side-end patch...
The pattern that is formed will be the same from all directions,
And Multigrip needs fewer joints; it comes in bigger sections!

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 3-66

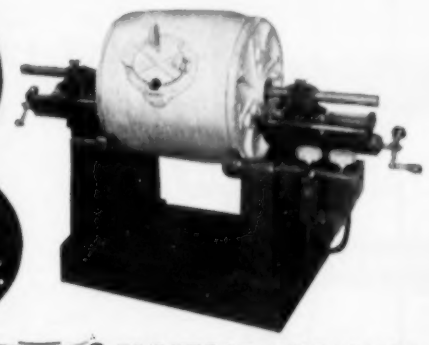
UNITED STATES STEEL

If you write maker identify as IEN-4231

All the refinements of its big brothers!

Type GMS

60 lb. 30 kw.



DETROIT ROCKING ELECTRIC FURNACE

This compact, efficient 60-lb. furnace has all the features of the famous, large capacity Detroit Electric Furnaces that melt metal for world famous products. Type GMS produces uniform, high quality melts with efficient and economical use of power. It's excellent for limited production, and for experimental and educational use. New rocking controller, 3-phase motor and independently-mounted electrode brackets are new features . . . Sold complete with transformer. Write for information.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: in BRAZIL—Equipamentos Industrias, "Elsa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as IEN-4232

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
11 West 25th St., New York 10, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16¼" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
ADDRESS _____

If you write maker identify as **IEN - 4233**

with "clear line" inside communication

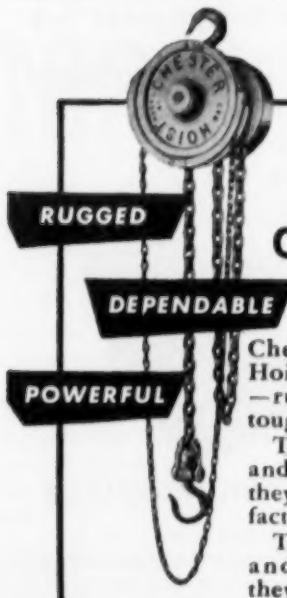
AMPLICALL equips your business with a pressure-easing internal communication system. Its "clear line" facilities provide *2-second speech contact* within and between departments. AMPLICALL frees your busy switchboard for important outside calls—keeps personnel *on the job*—keeps talk terse—saves "waiting and walking" time. Today, more than ever, your business needs pressure-easing, time-saving AMPLICALL. There is a system to fit your special needs. Get the full facts today!

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3523-K Addison St., Chicago 18, Ill.

If you write maker identify as **IEN - 4234**



RUGGED
DEPENDABLE
POWERFUL

Spur-Geared CHESTER HOISTS

Chester Spur-Geared Chain Hoists are made for hard work—ruggedly built to do your tough lifting jobs efficiently.

They're safe for your men and equipment, too, because they're actually built to a safety factor of 5 times their rated load.

They operate more smoothly and wear longer, because they're Timken Tapered Bearing equipped.

Capacities, ¼ to 25 ton in standard Spur-Geared . . . quickly available, also, the Chester specials including Low Headroom, Extended Handwheel, and others. Ask your distributor . . . or write for complete catalog and tell us your requirements.

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

If you write maker identify as **IEN - 4235**

Machine problems requiring transmission of air or liquids from stationary to rotating machine members are best solved with FAWICK ROTORSEALS.

Precision ROTORSEALS are available in single and multiple passage units, insuring dependable sealing of air, liquids or gases under pressure. They are equally effective in vacuum applications and may be operated continuously or intermittently in either direction.

Write for ROTORSEAL Bulletin ML-6.

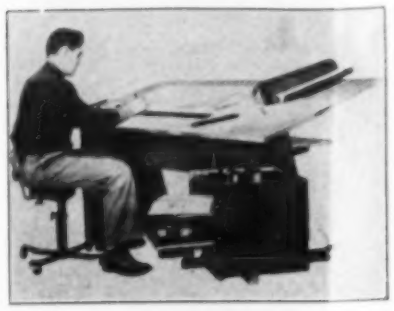
FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD • CLEVELAND 11, OHIO

FAWICK Airflex

If you write maker identify as **IEN - 4236**

DRAFTING . . Adjustable table and accessories with 3 by 6-ft. top

Source: TECTONIC SERVICES INC.
2072-76 E. 36th St., Cleveland 15, Ohio



About $80

White pine plywood is employed in construction of this new drafting table and its hinged supplies cabinet and rear print shelf. The top is bound with aluminum molding, squared to guide a T-square. The overhang at the left provides protected space for a two-drawer letter file. At the right is a hinged palette table with two sliding shelves to store supplies and a top with flanges on three sides to retain drafting equipment. A slide panel closes the front and can be locked in place. At the rear is a print shelf to be used by the draftsman on that side, in a multiple installation.

The top is 30½ in. above the floor in its lowest position. It can be raised and set level as high as 41 inches. Metal slides permit positioning it at a desired angle. Shipment is knocked down in an assembly measuring 3 by 6 ft. by 3 inches.

If you write maker identify as **IEN - 4237**

RECTIFYING . . Selenium units, 3 to 50 kw. are available from stock

Source: AMERICAN RECTIFIER CORP.
95 Lafayette St., 1st Floor, New York 13, N. Y.

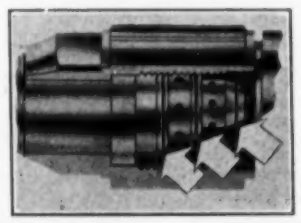
Free brochure upon request

The company announces assembly of a stock of its selenium rectifiers in a range of capacities from 3 to 50 kw. for 110 or 220 volt dc. output and for either fixed or variable dc. voltage to operate on specified ac. input. Each unit is tested with a 200 per cent overload prior to shipping.

If you write maker identify as **IEN - 4238**

WELDING . . Oxy-acetylene torch employs replaceable seating rings

Source: NATIONAL CYLINDER GAS CO.
838-42 N. Michigan Ave., Chicago 11, Ill.



Assembles by hand

Gas-Tite trade names new construction of the company's welding and cutting torches in which Servene rings are employed to make the gas connections between the mixer and the torch handle. A user can tighten the holding nut by hand to complete the assembly. The rings can be replaced when they become worn. The new construction applies with any Torchweld No. 54 handle to either weld or cut. It is suited particularly for outdoor work where particles of dirt or sand may enter and lodge on the seats.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4239**

SPEED UP
SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.

ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make cloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW
EA. **$19.50** F.O.B. CHICAGO
Spot Shipment
Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE • FRANKLIN PARK, ILLINOIS

If you write maker identify as **IEN - 4240**

Glamorize your products with attractive colors and you'll see how fast-moving they can really be! A snug-fitting Matthews Mask boosts finishing production . . . assures quality color control. Write for information and literature . . "Behind The Mask."

JAS. H. MATTHEWS & CO.
3962 FORBES ST. • PITTSBURGH 13, PA.
NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON, N. J.

If you write maker identify as **IEN - 4241**

BRING OVERHEAD COSTS DOWN WITH WEBER *Aerostand*

ADAPTABLE FOR HUNDREDS OF JOBS!

No matter what the industry, Weber Aerostand can serve it better...more efficiently...more economically and above all far more safely when it comes to raised platform jobs. The worker has complete safety while working on a platform from 3′ to 24′ in height. Both hands are free for the job...tools are within easy reach. Resulting in a better job at lower cost.

Weber Aerostands roll on and off the job quickly, collapse easily for storage. Truck locks assure a stationary stand while working. Guard rails and skid-proof surfaces on steps and platform guarantee sure footing. Many industries use Weber Aerostands. They are familiar objects in the Aircraft, Oil, Railroad and Building Industry.

AEROSTAND 10E

AEROSTAND 10D—Platform height from 3′ to 10′. (With Aerostand 4, gives maximum 14′.)

AEROSTAND 10E—Same as Model 10D—with addition of 16″ pneumatic wheels for smoother, easier mobility.

AEROSTAND 20A—Provides elevated work platform from 13′ to 20′. (With Aerostand 4, gives maximum 24′.)

AEROSTAND 4—Handiest utility work stand made. 4′ high work platform. Combines with Models 10D, 10E and 20A to give increased working height.

FOLDER AVAILABLE—If you would like to read about the many interesting uses for Weber Aerostands ask for folder IEN 100.

FREE CONSULTATION SERVICE—Weber engineers can often suggest uses for Aerostand that have not been apparent to the management of an individual plant. They are experts at determining the type and number of Aerostands that will give you maximum efficiency for your specific requirements. Please write us regarding your particular plant problem.

WEBER *Aerostand*
holds the man up to the job IN SAFETY

WEBER AIRCRAFT CORPORATION
(AEROSTAND DIVISION)
2820 Ontario Street • Burbank, California

If you write maker identify as IEN - 4243

This TORIT DUST COLLECTOR Gets Around to Get Results

In this shop, doing specialized work, several grinding and cutting machines were used intermittently. Odd shapes and sizes, too, were involved. Here the dust problem was solved with a mobile Torit Dust Collector that could be moved as necessary. A Torit flexible suction tube assembly insured nozzle adjustment to the position best suited for the work being done.

Torit also manufactures a line of cyclone type dust separators. Sizes up to 5 H.P., with or without after-filters.

Standard model Torit Dust Collectors meet the requirements of most dust collecting operations, and special adaptations can be quickly fabricated. Compact and self-contained they are very economical to install, low in operating costs and very easy to maintain. For details write:

see our catalog in MACHINE TOOL CATALOGS or write for copy

TORIT MANUFACTURING CO.
286 Walnut St., St. Paul 2, Minn.

If you write maker identify as IEN - 4244

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY

Standard 2-way entry bolted type skid built to handle loads up to 5 tons.

Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

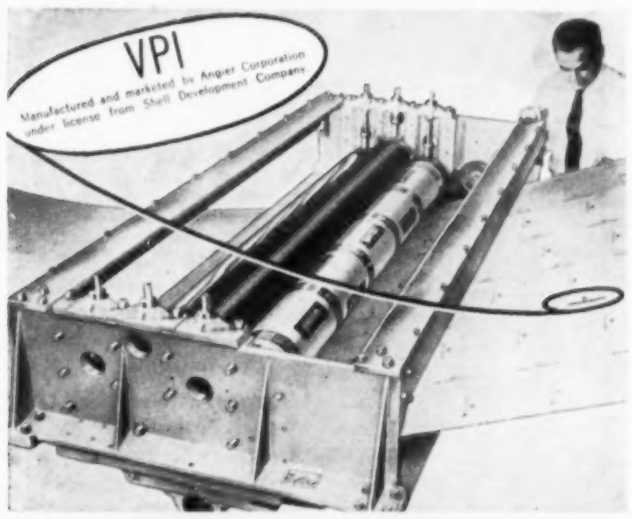
Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 4245

Print Your Product as You Make It!



NEW GOTTSCHOPRINTER eliminates costly separate operation for printing all-over designs or repeated legends on any material processed in continuous web. Prints clean, sharp, permanent impressions on metal, rubber, linoleum, cloth, plastics, gasket material, paper, laminations, etc. up to 1" thick and 72" wide . . . *prior* to rewinding, slitting, sheeting, fabricating. Full details on request . . . but please state requirements.

Gottscho — ADOLPH GOTTSCHO, INC. — Hillside 5, N. J. — 50TH YEAR

If you write maker identify as IEN - 4246

STORING . . Adjustable shelves to store old records, correspondence

Source: AURORA EQUIPMENT CO.
420-24 Cleveland St., Aurora, Ill.

No. 1480 about $39

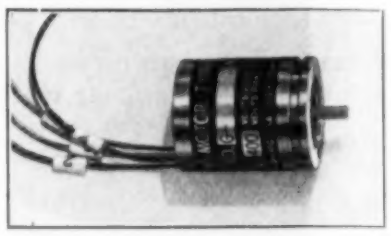
Steel shelves can be positioned in 1½-in. steps in this new steel record storage equipment. It is available in units measuring 3 ft. in width, 1 ft. in depth and either 7 or 10 ft. in height. The assembly is flexible, permits moving any unit without moving adjacent ones. Additions can be made as the need arises.

One unit, 7 ft. in height, with shelves set on 12½ in. centers to hold letters and ledger sheets provides 18 lineal feet of storage space. The 10-ft. unit provides 27 feet. These two assemblies are known respectively as No. 1480 and No. 1481.

If you write maker identify as IEN - 4247

MOTOR . . Miniature servo unit, 0.25 to 0.35 oz. in. stall torque

Source: G-M LABORATORIES INC.
4312 N. Knox Ave., Dept. J, Chicago 41, Ill.



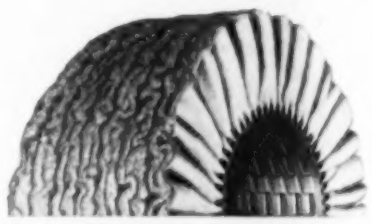
Precision assembly

Overall length and diameter are about 1 in. for this new motor. It is available for operation at frequencies between 60 and 400 cycles. It is built in 2, 4 or 8-pole assembly. The output shaft can be supplied to specification and can be equipped with an integral pinion. Manufacturing tolerances are within 0.0001 inch.

If you write maker identify as IEN - 4248

POLISHING . . Centerless buff, radial pleats make cooling channels

Source: AMERICAN BUFF CO.
2412-16 S. La Salle St., Chicago 16, Ill.



Details on request

Locking rings in the bore of this new Centerless buff hold the assembly together in a compact, non-shifting set-up. Regularly spaced radial pleats are held by steel gripper teeth on the center ring. They provide cooling channels outward from the center in uniform arrangement. Controlled ventilation is available with air vent plates that fit into the flanges of the assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4249

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line . . . provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

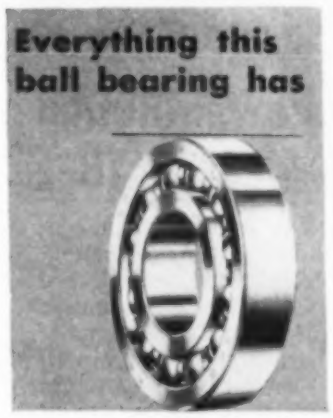
Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin 465-5.

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 4250

Everything this ball bearing has you can get in FAFNIR Ball Bearings this small



• For extremely small shafts in instruments, home appliances, cameras and projectors, fractional h.p. motors, Fafnir makes several series of extra small ball bearings . . . in metric bore sizes down to 4 mm and in inch sizes down to ⅛". Available with standard, special or super-precision tolerances. Three constructions . . . filling slot, non-filling or spring type retainers. Can be fitted with grease shields, felt seals, Mechani-Seals or Plya-Seals. If you want top performance on a small shaft — Fafnir has the answer. Write for new Instrument Bearing Catalog. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 4251

LOW COST POWER TRANSMISSION

Line-O-Power Drives—Straight line and right angle (horizontal and vertical) units. Vertical available for extended output shafts.

Foote Bros.-Louis Allis Gearmotors—17 sizes with output speeds from 7.5 to 780 r.p.m. and capacities of 1 to 150 h.p.

Maxi-Power Helical Gear Drives—42 sizes available in this heavy-duty line. Ratios 2.08 up to 360 to 1, capacities up to 1550 h.p.

Hygrade Worm Gear Drives—Horizontal and vertical types. Hytop vertical accommodates long, unsupported output shafts.

WRITE FOR BULLETINS
LPB—*Line-O-Power Drives*
GMA—*Foote Bros.-Louis Allis Gearmotors*
HGB—*Hygrade Worm Gear Drives*
MPB—*Maxi-Power Helical Gear Drives*

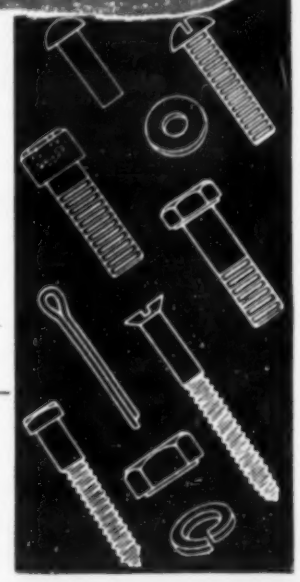
FOOTE BROS.
FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 S. WESTERN BOULEVARD CHICAGO 9, ILLINOIS

If you write maker identify as IEN - 4252

STOP CORROSION with HARPER

EVERLASTING FASTENINGS BY THE DOZENS OR BY THE MILLIONS

If you use fastenings of brass, bronze, copper, monel, aluminum or any stainless steel, you can get what you want from Harper. Over 7,000 items stocked—all backed by Harper's advanced metallurgists and skilled engineers. See your Harper Distributor.



HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog.
Name.....
Address.....
City.....*State*.....

If you write maker identify as IEN - 4253

Set up Fume Ventilation yourself with SPIRATUBE®

SPIRATUBE's design qualities make it ideal for portable and semi-permanent ventilation service, fume removal, all dust collection systems. It has the greatest flexibility and retractability. Sections of SPIRATUBE link together or detach in 10 seconds! No tools needed, no parts to get lost. Nothing could be simpler. And most important, YOU CAN INSTALL SPIRATUBE YOURSELF. Whatever your ducting requirements, FLEXIBLE's line of tubing will meet them better, cost less.

WRITE TODAY for this Illustrated Booklet

Flexible Tubing CORPORATION
Guilford, Connecticut Pasadena 1, California

For all ducting systems:
FLEXFLYTE®
SPIRATUBE®
AYRTUBE®

If you write maker identify as IEN - 4254

NATIONAL VULCANIZED FIBRE

contributes to an improved product—universal coil forms for Cutler-Hammer, Inc.

In the manufacture of wire spools, Cutler-Hammer, Inc. uses formed pieces of tough National Vulcanized Fibre possessing exceptionally high dielectric strength. The form is expandable to conform to cores of various sizes. This application is typical of the many uses National Vulcanized Fibre has in the electrical field.

National Laminated Plastics nationally known—nationally accepted

NATIONAL VULCANIZED FIBRE — A tough, horn-like material with high dielectric strength. Excellent machinability. Sheets, Rods, Tubes, Special Shapes.

PHENOLITE Laminated PLASTIC — Good electrical insulating material with great mechanical strength; moisture resistant. Sheets, Rods, Tubes, Special Shapes.

NATIONAL VULCANIZED FIBRE CO.
Wilmington, Delaware Offices in Principal Cities
Since 1873

If you write maker identify as IEN - 4255

TINNERMAN Speed Nuts®

Increase Production... Cut Assembly Costs

Snap into Bolt Receiving Position; Eliminate Welding and Staking!

Combine 2 Fasteners in ONE; Eliminate tapped Plates!

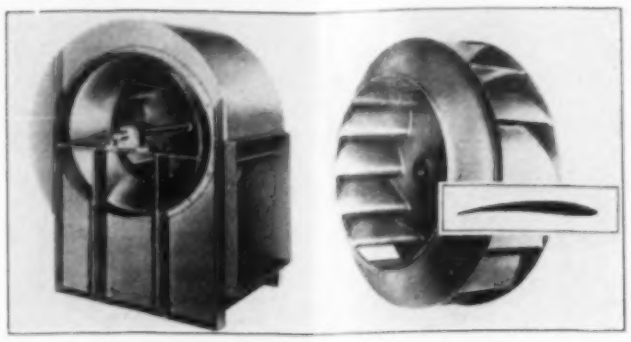
For better fastening methods, do as thousands of industry's leaders have . . . turn to SPEED NUTS, "The Fastest Thing in Fastenings." Above are two of thousands of standard types available to reduce assembly time, cut material costs and save on materials-handling! See your TINNERMAN representative or write direct for details on our FREE Fastening Analysis service for your products!

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 4256

VENTILATING . . Centrifugal blower mounts quiet, efficient airfoil blades

Source: CHICAGO BLOWER CORP.
9867-71 Pacific Ave., Franklin Park, Ill.



Ask for Bulletin A-101

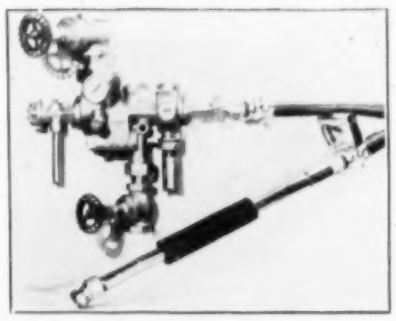
New contour on the blades characterizes this centrifugal blower. The shape is based on aerodynamic design used in aircraft. The result is high volume delivery with negligible noise and smooth air flow. The complete unit is suited particularly for heating, ventilating and air conditioning installations where noise suppression is an important factor.

The line includes a range of sizes with ratings from 600 to 750,000 cfm. at ⅛ to 16 in. of static pressure. Impeller diameters are about 12 to 132 inches. Drive arrangement and direction of rotation can be specified.

If you write maker identify as IEN - 4257

CLEANING . . Pressure jet equipment delivers solution and then hot water

Source: SELLERS INJECTOR CORP.
1601-X Hamilton St., Philadelphia 30, Pa.



Loosens dirt and rinses

Booster Jet is new design supplementing the company's Chemo-Jet cleaning equipment, previously described IEN-7024-52. The new equipment operates on steam supply at 5 to 25 lb. to provide pressure discharge at 100 to 200 lb., as compared to the previous equipment's requirement for steam at 30 to 100 lb. from a plant line.

A solid stream of hot water, between 160 and 210 deg., is delivered under pressure, either clear or containing as much as 25 per cent of its total volume in cleaning detergent. There is sufficient impact upon contact with a surface to remove dirt and grease from walls, floors and equipment.

Identify as IEN - 4258

Opaque window envelopes for pay checks are made by Outlook Envelope Company. Now they carry a printed message suggesting that the enclosed check is a private matter between the employee and the company. Sample sent on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4259

NEED A GOOD SOURCE FOR TERMINALS? WE MAKE *All Sizes, All Kinds!*

SMALLEST TO LARGEST — Hermaseal manufactures Sealed Terminals in an extremely wide range of sizes, for very low or very high voltage, with tubular electrodes for high current-carrying capacity — and with solid electrodes for moderate current requirements.

COMPLETE ASSEMBLIES — We have facilities for soldering terminals to your transformer covers — evacuating and pressure filling enclosures.

NEW CATALOG — Just off the press, a new catalog with descriptions and specifications for most of Hermaseal's stock sizes and designs. Write for your copy today!

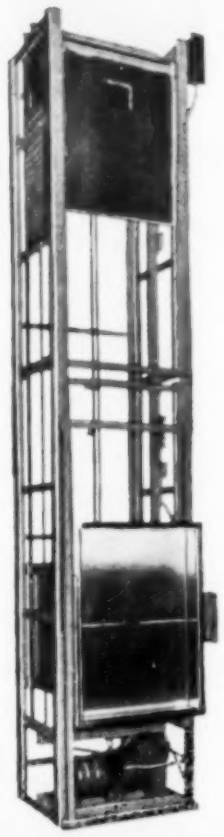
Hermaseal
THE HERMASEAL CO., Inc.
Elkhart 25, Indiana

If you write maker identify as IEN - 4260

Doubly-Profitable Remodeling Tip:

install labor-saving

MATOT DUMB WAITERS



Space, time, labor and related savings are practically unlimited with MATOT "Not-so-dumb" dumb waiters—in factories, stores, institutions.

Only MATOT offers *extra* automatic features for faster service and trouble-free operation.

Hotels, restaurants, institutions, schools, industry and commercial buildings will profit with MATOT installations. Obviously, there's profit in such installations for you too.

MATOT Equipment Includes:

- Electric Dumb Waiters
- Hand Powered Dumb Waiters
- Hand Powered Elevators
- Invalid Elevators

See Sweet's File 33A for complete information, or write now for 8-page MATOT Catalog and Specification Guide.

D. A. MATOT, INC.
1539 W. Altgeld St. • Chicago 14, Ill.

If you write maker identify as IEN - 4261

KOOLVENT *Ventilated Aluminum* AWNINGS

Added beauty, utility, protection for all buildings . . . extra comfort for building occupants!

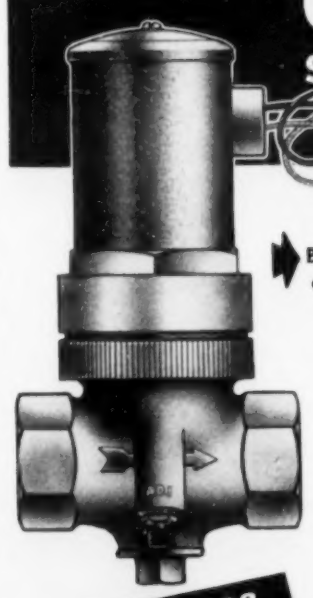
Made of lifetime aluminum, KoolVents will last as long as the building on which they're installed. They eliminate the expense of putting up, taking down and storing awnings each year . . . provide year 'round service that pays for itself. Choice of colors!

Write today for FREE booklet—"Koolvent Serves Industry"

KOOLVENT Metal Awning Corporation of America
KEYSTONE BLDG., PITTSBURGH 22, PA.

If you write maker identify as IEN - 4262

WHEN THE PRESSURE'S ON! GOULD SOLENOID VALVES



¼ TO 3" SIZES
WIDE PRESSURE RANGE

BUILT-IN: Manual Opening, and Adjustable Cushioning Adjustments

Guaranteed Water and Oil Proof Coils

General Service and Special Service Valves Available

VELVETROL TRADE MARK

FLOW CONTROL SERIES
Plus all above features. ¼ to 2" sizes.

VELVETROL DL and D Valves incorporate new O-Ring bonnet seal.

WRITE FOR CATALOG!

J. D. GOULD COMPANY
730 EAST WASHINGTON ST. • INDIANAPOLIS 2, IND., U.S.A.

If you write maker identify as IEN - 4263

If you write maker identify as IEN - 4264

JIG GRINDING ACCURACY *guaranteed**

INFINITE CONTROLLED SPEEDS
30,000 TO 65,000 R. P. M.

Easily connect jig grinder to jig borer or mill

Then you can finish grind in hardened steel to "tenths" . . . jig grind dowel holes square with a ground base . . . move location of holes in hardened steel blocks . . . jig grind interchangeable holes in hardened sections . . . grind small holes with diamond impregnated mandrels . . . grind contours and relief with tungsten carbide burrs . . . grind radii in die sections . . . eliminate jig bushings in tools where close spacing is essential.

Other infinitely controlled air driven spindle applications

Place spindle on most any machine. Use it for finishing contours on hardened steel working surfaces . . . burring or milling die castings . . . routing wood contours . . . carbide milling or finishing slots . . . finishing holes in hardened steel to "tenths" . . . grinding with diamond wheels, carbide burrs, or diamond impregnated mandrels.

Advantages—10 micro finishes using carbide mills . . . 6 micro finishes using mounted points, operates at any angle . . . air driven, air cooled, overheating prevented . . . speed controlled at optimum point . . . 3¾" long motor uses little working space . . . By controlling speed at any point you abolish need for many constant speed spindles.

For immediate quotation please state machine tool application. Get this manual of photos showing operations Vulcanaire performs.

*Dependably accurate to "tenths"

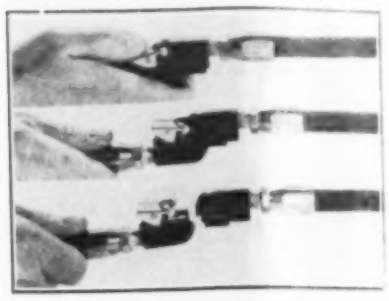
Vulcanaire
BUILT BY TOOLMAKERS FOR TOOLMAKERS

VULCAN TOOL CO. 734 LORAIN ST., DAYTON 10, OHIO

If you write maker identify as IEN - 4266

HOSE FITTING . . Quick coupler has shut-off valves, for liquids, air

Source: AEROQUIP CORP.
303 S. East Ave., Jackson, Mich.



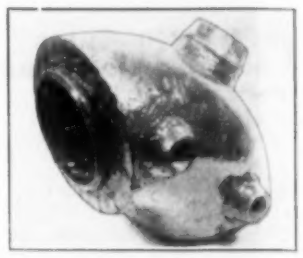
Press and pull disconnects

Hinged latch is spring backed to hold two die cast aluminum assemblies in "connected" position in this new hose coupler. Rubber O-rings seal the connection. Pressing the lever releases the coupling halves and internal valves immediately close the openings to seal against leakage from either hose end. The coupler applies with water, hot or cold oil, anti-freeze solutions, gasoline, diesel fuel, compressed air.

If you write maker identify as IEN - 4267

PIPE FITTING . . Jacketed design for welded assembly in a pipe line

Source: RED JACKET CO.
235-39 Fourth Ave., Pittsburgh 22, Pa.



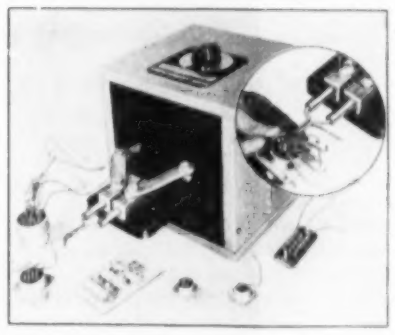
90 deg. elbow

The company announces addition of a line of weld type jacketed pipe fittings to its previously developed flange units for assembly in pipe lines ranging from 2 to 10 inches. The fittings are made of steel for 150-lb. service. They include 90 and 45-deg. long radius elbows, jacketed lines of pipe and special fittings to specification. A 2-in. pipe size takes a 4-in. jacket. A 10-in. size takes a 12-in. jacket.

If you write maker identify as IEN - 4268

SOLDERING . . Resistance machine tooled for AN electric connectors

Source: JOYAL PRODUCTS INC.
56-B Belmont Ave., Newark 3, N. J.



For production use

L-shaped electrodes in this new 250-watt machine will reach into tiny clearances in AN connectors. They are closed in to heat the terminal and solder by depressing a foot switch. Heat is set by turning a switch knob on the housing. Electrode life is about a year. Replacement costs about $3 per set of electrodes.

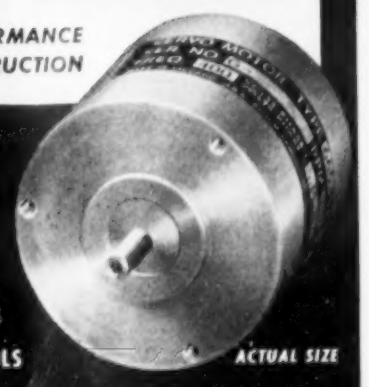
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4269

Specify G-M PRECISION - ENGINEERED

SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION



In the operation of—
- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of G-M LABORATORIES • Inc.

4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 4270

FOR TESTING
Screws, thread-cutting and thread-forming screws—all types of threaded fasteners; threaded parts and threaded connections.

FOR MANUFACTURERS
DESIGNERS
INSPECTORS
TOOL ENGINEERS
LABORATORIES and for
PRODUCT CONTROL
in assembly.

Capacities: (0-200 in. lbs.) or (0-150 ft. lbs.)

Write for Bulletin TTF

P. A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

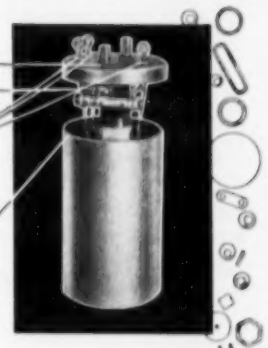
If you write maker identify as IEN - 4271

3 Soldering Operations in 1 Easy as ABC with KESTER "SOLDERFORMS"

A Solder screws and stud to can cover. "Solderform" Disc & Rings 5% Silver —95% Lead Alloy. Melting Point 680°F.

B Solder glass terminals to cover. "Solderform" Rings 63% Tin—37% Lead Alloy. Melting Point 361°F.

C Hermetically seal cover on can. "Solderform" Ring 28.5% Bismuth—28.5% Tin—43% Lead Alloy. Softening Point 250°F.



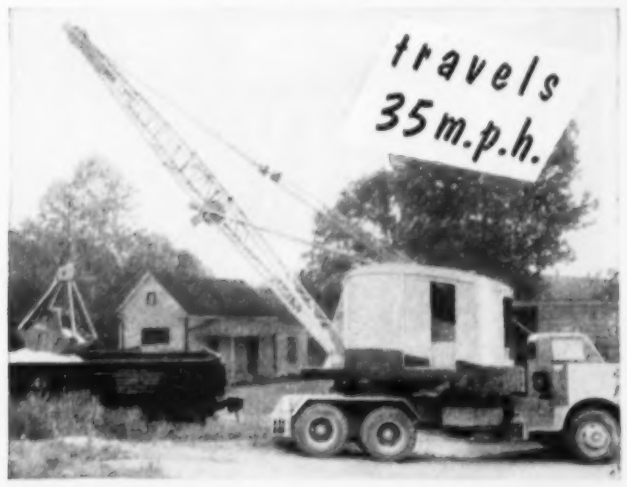
Here's a typical example of a tough resistance soldering job involving progressively lower melting temperatures. Kester "Solderforms" made sure this high precision oscillator coil came through every test successfully.

WRITE TODAY for free "Solderform" samples and literature.

KESTER
SOLDER COMPANY

4211 Wrightwood Ave. • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 4272



LIFTS UP TO 25 TONS

Behind the 25-ton lift capacity of this Koehring 304 Truck Crane are many important features that give you big-tonnage output. On the intermittent usage of clamshell or crane work, there's no time-out for adjusting clutches. Heat-compensator spring automatically makes all tension changes, maintains full clutch efficiency at all times. Koehring booster clutch cuts normal lever pull 50%, retains accurate "feel" of load. Also check: max. 110-ft. boom length with jib, power boom lowering, 35 mph mobility. Other sizes: up to 79½ tons lift capacity.

KOEHRING COMPANY
Milwaukee 16, Wis.

Write for bulletin

KOEHRING *Truck Cranes*

If you write maker identify as IEN - 4273

A BETTER CLOSURE for SMALL PAPER BAGS

UNION SPECIAL'S Style 60000 D bag closing machine, producing the exclusive Dubl-Tape closure, is designed to speed packaging . . . cut costs . . . and improve appearance.

- **FAST—Speed to match output of standard filling and weighing equipment.**
- **NEAT—Produces an eye-pleasing, sales-stimulating package with high merchandising value.**
- **ECONOMICAL—Operating cost per bag is at a minimum . . . uses inexpensive cotton thread and paper tape.**
- **VERSATILE—Adjustable for a wide range of bag sizes, short or long runs.**

Write for BULLETIN No. 100 to get the complete facts on this machine . . . and how it can do a better closing job for you.

Union Special MACHINE COMPANY

410 N. Franklin Street • Chicago 10, Illinois

If you write maker identify as IEN - 4274

2 Seconds CAN SAVE YOU TWO HOURS!

Adjusting bevel gear mesh with a laminated shim is a matter of two seconds to remove a lamination!

The shim in this case is made of LAMINUM®, our exclusive material. It is a "solid" unit built up of 16 layers of .002 brass. It peels quickly and easily. Each shim removed adjusts the bevel gear position by two thousandths.

You save time by easier machining tolerances on the housing; ***you save time*** by eliminating pesky assembly machining; ***you save*** by not tying up a machine intermittently. IT'S EASIER!

LAMINATED SHIM COMPANY, INC.

SEND FOR LITERATURE

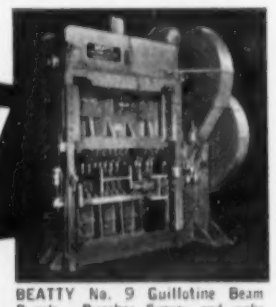
SHIM HEADQUARTERS SINCE 1913

Check Our Stampings Division For Your Stamped Parts Requirements

2104 UNION STREET • GLENBROOK, CONNECTICUT

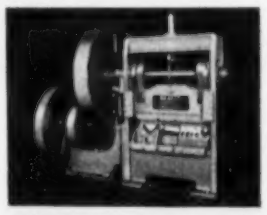
If you write maker identify as IEN - 4275

BEATTY



BEATTY No. 9 Guillotine Beam Punch. Punches flanges and webs of beams 6" to 30". Capacity 200 tons.

METAL WORKING TOOLS —— are the product of broad experiences and skill aimed at solving a specific problem. If you have such a problem, let a Beatty engineer work with you on it. Our broad experience in metal working production qualifies us to handle the most difficult assignment.



BEATTY Guillotine Shear for "short order" shearing without changing tools.

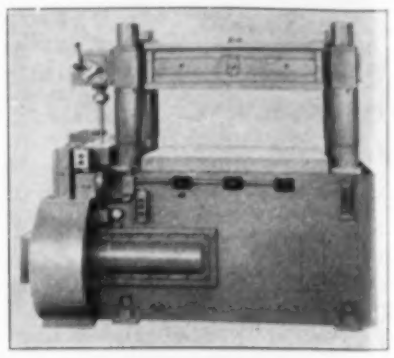
BEATTY Spacing Table handles flange and web punching without roll adjustment.

BEATTY MACHINE AND MFG. COMPANY
HAMMOND, INDIANA

If you write maker identify as IEN - 4276

HANDLING . . Die tryout machine for assembly, fitting and testing

Source: ALPHA TOOL WORKS
9279-83 Freeland Ave., Detroit 28, Mich.



Rates 100 ton

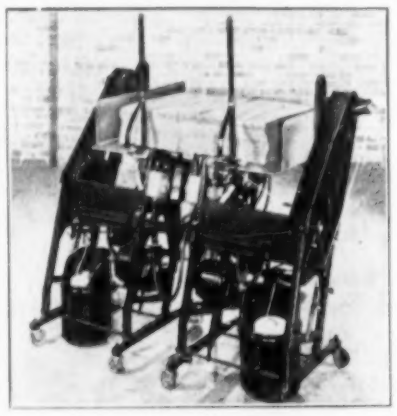
The pulldown head in this new tryout press can be released and rotated through a 240-deg. arc. This brings a press tool, secured to its working face, into position for minor alterations and for final finishing without taking it out of its registered position. The drive mechanism is enclosed in the base and is operated by means of an air clutch and a multiple disc brake assembly.

Electric controls permit inching, single stroke, continuous operation and forward or reverse movement. Two hand push-buttons and one emergency stop button are standard equipment. Stroke measures 6 inches. Operating speed is maximum at 50 strokes per minute. The press occupies a floor space measuring 75 by 84 inches. It stands 82 in. in overall height.

If you write maker identify as IEN - 4277

PACKAGING . . Double tying machine secures 15 to 20 bundles per minute

Source: B. H. BUNN CO.
7603-7 Vincennes Ave., Chicago 20, Ill.



Available on trial

New assembly of right and left hand units provides a double tying machine particularly suited for use on flat bundles such as stacks of knocked-down corrugated boxes. The new machine operates best with 16 to 20-ply soft cotton twine. It makes a double wrap with each of its two tying heads. Then it tensions, knots and cuts off the twine. The units can be spaced to place the wraps 14 to 72 in. apart. Two machine sizes take bundles to 26 and to 34 in. measured from front to back.

Identify as IEN - 4278

Manufacturer of molded rubber products, who uses Industrial Chemical's Formula 105B boiler water treating material, has found the material suited also to remove accumulated deposits in the rubber molds. He fills the mold cavities with the material, applies heat for a short time, then washes the cavities. The die comes out clean and ready to go again.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4279

GO "AMERICAN" FOR CIRCULAR WELDED PRODUCTS

We make rings, bands, components and assemblies by either fusion or resistance welding of ferrous or non-ferrous metals. We believe that our quality is second to none and we know our products are reasonably priced. Many "Blue Chip" companies are our customers. Their products range from fractional horse-power motor shells to jet engine components.

SEND FOR YOUR COPY OF OUR 20 PAGE ILLUSTRATED CATALOG

THE AMERICAN WELDING & MANUFACTURING CO.
WARREN, OHIO

If you write maker identify as IEN - 4280

Yes! THRIFTMASTER makes ALL TYPES of DRILLHEADS

Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Electric Type Adjustable Drill Head . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

- **We Stock or Can Build the Right Drillhead for Your Job.**
- **Write for THRIFTMASTER Complete Catalog or phone for a rush, on-the-spot, quote.**

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER *Products Corporation*

1040 N. Plum Street
LANCASTER, PENNA.

Also makers of

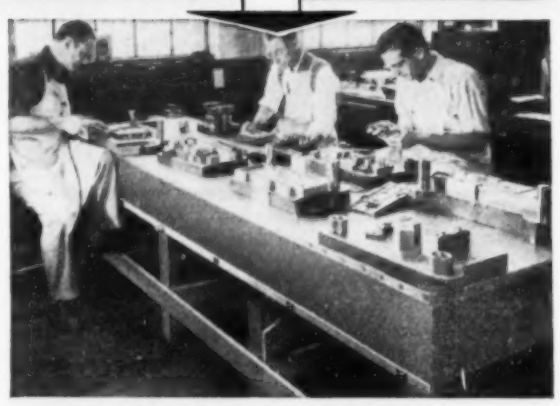
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 4281

FACTORIES need MORE Electrical OUTLETS!

PLUGMOLD 2000
with Snapicoil

Is the FASTER, EASIER, CHEAPER way to provide multiple convenience outlets!



PLUGMOLD makes work benches more efficient!

This easy-to-install multi-outlet system gives you outlets right at the spot where they're needed — Duplex or NEMA grounded outlets every 30 inches in a continuous run. Closer spacings available if needed; also available in 3-foot and 6-foot factory-wired sections.

PLUGMOLD 2000 eliminates the hazards of a tangle of extension cords — dangerous to workers and to the work! With a PLUGMOLD outlet right at the point of use, you can use shorter cords for electrical tools.

Write today for the free Plugmold 2000 book!

WIREMOLD

Makers of
PLUGMOLD—multi-outlet systems
WIREMOLD—electrical raceways
PANCAKE—overfloor raceways

THE WIREMOLD COMPANY
HARTFORD 10, CONNECTICUT

If you write maker identify as IEN - 4283

Aerovent BELTED DUCT FAN

KEEPS MOTOR OUT OF AIR STREAM

For Foundries, Paint Spray Booths, Sanding, Acid Tank Rooms, etc., where fan motors must be protected

Aerovent Belted Duct Fans with "Macheta" design handle maximum air with minimum use of power. Sizes 12" to 84"; 2, 4, or 6 blades. All fans furnished with ball bearing motors suitable for mounting in any position. Easily installed. For many applications.

Other Models: Direct Connected, Man Cooling, Extended Shaft, Duct Type, Pulley Drive.

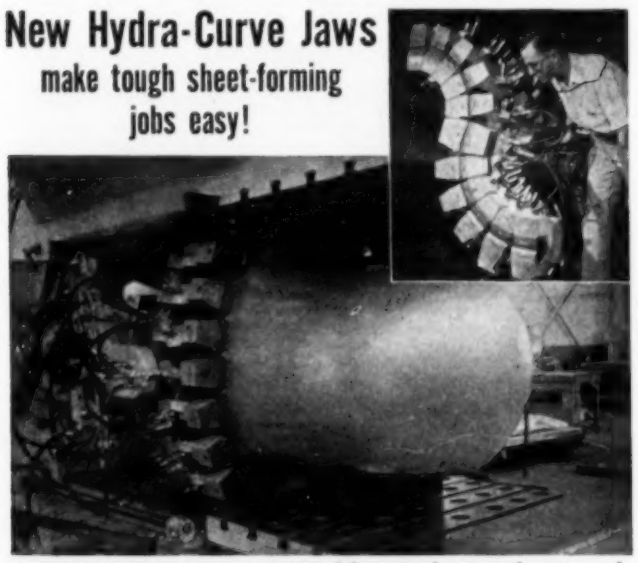
Certified Ratings — Member of AFMA

Write today for
ENGINEERING BULLETIN

AEROVENT FAN CO., INC.
ASH AND BROWN STREET, PIQUA, OHIO
Sales Engineers in Principal Cities

If you write maker identify as IEN - 4284

New Hydra-Curve Jaws make tough sheet-forming jobs easy!



HUFFORD HYDRA-CURVE JAWS simplify stretch-wrap forming of deep curvatures; permit stretch-wrap forming of sheet parts heretofore difficult or impossible by this process. Hinged jaw elements curve sheets to almost any shape, matching cross-sectional die curves. Eliminates wrinkling, *reduces material requirements as much as 30% on each piece,* provides many other forming advantages.

Write for Details—*If you stretch-wrap form parts from sheets; get the facts on Hufford HYDRA-CURVE JAWS!*

HUFFORD *Machine Works Inc.*
1700 EAST GRAND AVENUE • EL SEGUNDO, CALIFORNIA

If you write maker identify as IEN - 4285

For Portable
AIR COMPRESSORS
PUMPS • HEATERS
WELDING UNITS
CONCRETE MIXERS
SPRAYERS
SPREADERS

FAYETTE Precision Built UNDERCARRIAGES

Complete Assembly, up to 6000 lbs. capacity. Tandems and spring variations for loads up to 12000 lbs.

PORTABLE TANKS
PAINTING EQUIPMENT
FARM AND ROAD MACHINERY
BOAT TRAILERS
LIVESTOCK BODIES
AIRPORT AND PUBLIC UTILITY EQUIPMENT

EASY WAY TO CUT PORTABLE EQUIPMENT ASSEMBLY COSTS

By simply making the necessary bolt attachments, your trailer or portable equipment is ready to roll on a precision built Fayette Undercarriage. Strong tubular construction eliminates up to 40% dead weight.

Loads move easier, track truer, because of precision construction.

Save money three ways . . . Simpler installation of completely assembled unit. Longer life, trouble-free service. Lower initial cost.

Tell us your transport needs and our engineers will recommend a practical solution to your problem.

WRITE TODAY FOR COMPLETE SPECIFICATIONS

FAYETTE MANUFACTURING COMPANY, 300 FRONT STREET, FAYETTE, OHIO

If you write maker identify as IEN - 4286

FABRIC . . Vinyl plastic film is sealed over woven Fiberglas fabric

Source: THERMOPLASTIC FABRICS CORP.
1457 Broadway, Room 904, New York 36, N. Y.

Ask for technical data

Waterproof wrapping and packaging, tarpaulins, shrouds, are typical applications for the company's new Fortron reinforced plastic sheet. It consists of two sheets of vinyl film laminated under heat and pressure over a center layer of Fiberglas fabric. The finished material is strong, light in weight and will not shrink. It is mildew and fungus proof, acid, grease, flame resistant. It remains serviceable in a temperature range from minus 65 to plus 165 deg. F. Opaque, colored and clear translucent forms are available. Standard width is 48 to 50 inches. Packaging is in 100-yd. rolls.

If you write maker identify as IEN - 4287

BRAZING . . Phosphate flux for ferrous and non-ferrous metals

Source: SPECIAL CHEMICALS CORP.
30 Irving Place, 6th Floor, New York 3, N. Y.

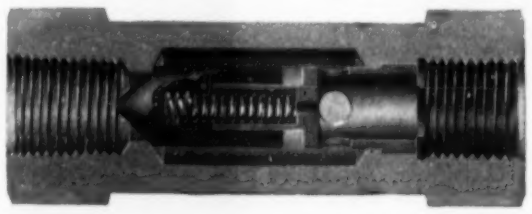
Working sample upon request

Kwikflux No. 91 is a new brazing and hard soldering flux based on a patented phosphate formula. It is suited for use on silver, brass, bronze brazing materials for direct, indirect or induction heated work. The flux evaporates slowly, flows quickly, covers thoroughly.

If you write maker identify as IEN - 4288

VALVE . . Nylon poppet check for air, oil or water to 3,000 pounds

Source: WATERMAN ENGINEERING CO.
723-27 Custer Ave., Evanston, Ill.



Cannot corrode in service

The nylon poppet in this new check valve is backed by a spring in the aluminum body. An internal guide limits the poppet travel in flow direction. The valve is available in four sizes for ⅜ to 1-in. pipe. Overall length is 3⅛ to 6 inches. The largest unit rates 40 gpm. of flow with pressure drop at 16 lb. when handling 220 SSU hydraulic fluid having a specific gravity of 0.87.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4289

Can our product help you improve your product?

This is **INNER-SEAL.** It's extremely durable, extremely effective . . . with many features that eliminate sealing problems in the manufacturing of countless products.

Inner-Seal's bead is of *live sponge rubber* which compresses under pressure, then springs back into shape. Its flange is of *woven spring wire,* tough but flexible enough to fit snugly around corners. Its coating is of *waterproof neoprene* . . . designed for sub-zero or tropical temperatures, sunlight, humidity, grease, oil or abrasion. Available in various dimensions. Standard Inner-Seal in many colors . . . heavy-duty "dumb-bell" type in black . . . special types can be made to order.

Although Inner-Seal is most widely known in the refrigeration, railway, shipping and automotive fields, it's continually finding many new applications. Maybe *you* have one . . . maybe we can help!

FREE SAMPLES and complete information. *Write today.*

Bridgeport INNER-SEAL Live Rubber WEATHER STRIPPING

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN - 4290

BUILD BETTER STRUCTURES inside your plant

Armco Buildings of STEELOX construction can be used *inside* your plant as well as outside. They have many advantages for shipping rooms, foreman offices, tool storage and similar enclosures.

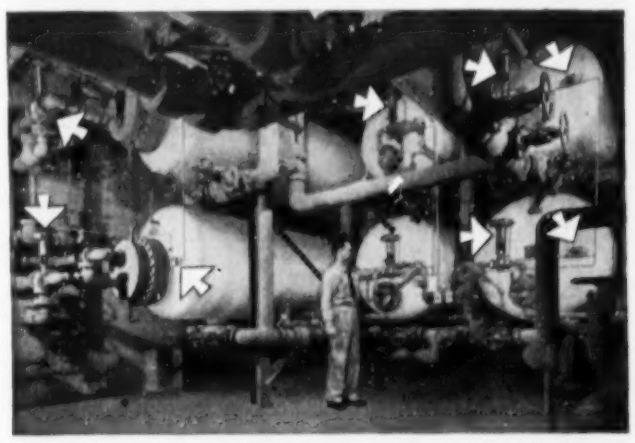
Erection is quickly done by a small crew. STEELOX panels provide both structural support and finished surface. Tight STEELOX construction excludes dust, reduces factory clamor and can be insulated against noise.

Armco Structures require minimum floor space. Should conditions change they can be moved intact or dismantled and rearranged. There is nothing to crack, warp or rot. Damaged parts can be easily replaced.

WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
2223 Curtis Street • Middletown, Ohio

If you write maker identify as IEN - 4291



Water Heaters Controlled by Powers Accritem Regulators

What's Your Water Temperature Control Problem?

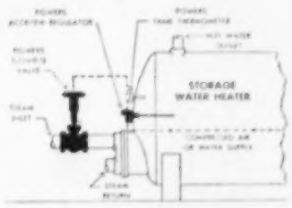
POWERS . . . with their many types of thermostatic regulators and 60 years experience is well qualified to help you find the right type of control for these applications:

Forced Hot Water Heating Systems; various types of Water Heaters and Heat Exchangers; Jacket Water Cooling for Air Compressors, Diesel and Gas Engines also Cyclotrons, Chocolate Enrobers and Plastic forming Presses; all types of Shower Baths and Hospital Hydrotherapy; processing X-Ray, Regular and Colored Film — and hundreds of other uses.

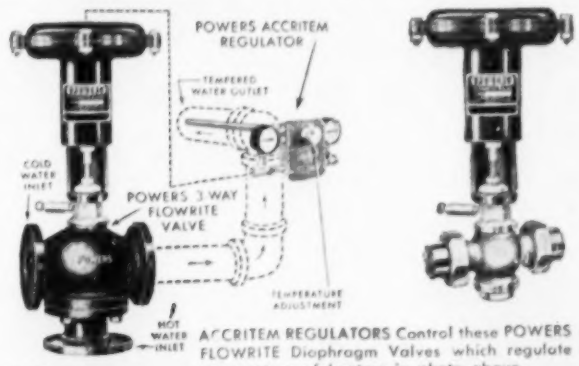
Only one of Powers varied line of water temperature controls is shown here . . . the *Accritem Regulator.* It's compressed air operated, has calibrated dial temperature adjustment, adjustable sensitivity and many other features described in *Condensed Catalog 3035.*

Compressed Air Operated

Only one of many applications
Small Size. Bulb is 12" long



Powers Accritem Regulators Give Years Of Dependable Service



ACCRITEM REGULATORS Control these POWERS FLOWRITE Diaphragm Valves which regulate temperature of heaters in photo above.

(a92)

THE POWERS REGULATOR COMPANY
Skokie, Ill. • Offices in Over 50 Cities, see your phone book.
OVER 60 YEARS OF WATER TEMPERATURE CONTROL

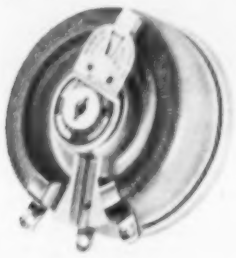
If you write maker identify as IEN-4293

4 FINE RHEOSTATS

Announcing 3 new sizes now in production

We have added to our H-50 rheostat, the new H-75, H-100 and H-150 models. These higher wattage rheostats incorporate all the improved features.

- **Perfection in brush control, automatically adjusting tension to complete, continuous contact.**
- **Positive, smoothly-controlled spring action.**
- **Greater flexibility—no risk of backlash.**



H-150

Completely bonded with our new high-temperature-enamel; more resistant to heat; increased safety factor; higher terminal strength.

And all are designed to comply with current standards of:
(a) Military Specifications JAN-R-22.
(b) Underwriters' Laboratories.
(c) R.T.M.A.
(d) N.E.M.A.

Send today for our new bulletin.

HARDWICK, HINDLE, INC.
Rheostats and Resistors, Newark 5, N. J., U. S. A.

If you write maker identify as IEN-4294

New INTRIMIK

Internal Tri-point Micrometer

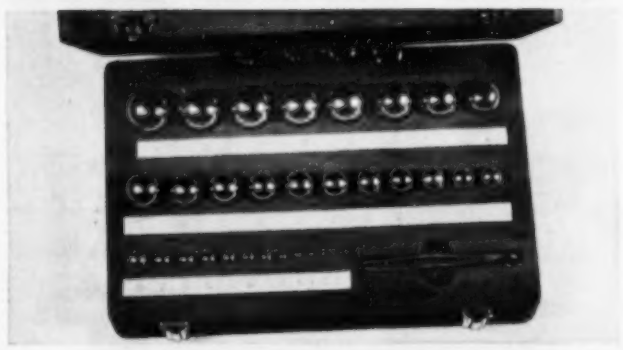
Now you can measure bores and holes *directly* — without masters — with the new Brown & Sharpe Intrimik. It reads like a conventional micrometer. Eliminates many expensive plugs and setting rings. Sixteen sizes to measure from .275" to 4.000". Extensions are available to facilitate measuring deep holes. Write for new illustrated Bulletin. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

WE URGE BUYING THROUGH THE DISTRIBUTOR

Brown & Sharpe BS

If you write maker identify as IEN-4295

SETS of Super-Precision MASTER BALLS



For GAGE BLOCK ACCURACY at NOMINAL COST

- **IDEAL FOR USE** in setting comparator gages — as masters and measuring standards.
- **SUPER-ACCURATE** — to 0.000010".
- **TWO SETS,** 1/16" to 1" diameter: **Set No. 16** — 16 balls in 1/16" increments. **Set No. 32** (shown above) — 31 balls in 1/32" increments.

EVERY shop, tool room and gage room will find many uses for these ITI Master Balls. ***Write for free bulletin!***

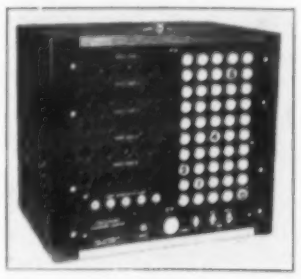
INDUSTRIAL TECTONICS, Inc. ANN ARBOR 2, MICH.

ITI **PRECISION BALLS**
All Materials — All Sizes
In Large or Small Quantities

If you write maker identify as IEN-4296

COUNTING . . Electronic equipment actuates relay at pre-set total counts

Source: HALEDY ELECTRONICS CO.
57 William St., Dept. IEN, New York 5, N. Y.



User sets the totals

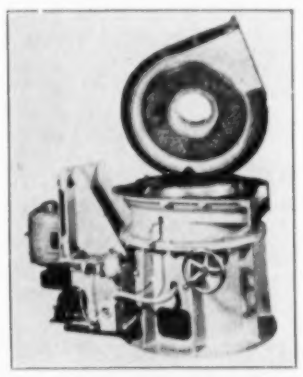
Illustrated is a typical assembly in the company's line of electronic counters. It provides a 5-digit count and 5 sequential preset count settings with 2 input circuits. The equipment is available with a maximum of 10 digits, 6 sequential settings and the required number of input and output circuits. The assembly is characterized by its use of cold cathode Type TT-1 counting tubes. They operate without filament transformer or high voltage power supply.

Operation can be maintained at rates of 15,000 counts per minute. Resetting takes place automatically and instantaneously without the loss of a single unit count. Recycling can be either manual or automatic. Operation is independent of line voltage variation. The input signal calls for a 30 to 70-volt positive pulse with maximum rise time of 4 milliseconds and maximum peak duration of 10 microseconds. Input is on 110-volt 60-cycle ac. Dimensions are 22 by 15 by 19½ inches. Weight of the assembly is 70 pounds.

If you write maker identify as IEN-4297

PROCESSING . . Bleaching machine for use on high density paper pulp

Source: JACKSON & CHURCH CO.
319-23 N. Hamilton St., Saginaw, Mich.



Uses peroxide bleach

Pulp feed is into the top center of this new "015" machine by means of a mechanism with which rate can be adjusted and controlled. Centrifugal force developed by rotating discs, between which the pulp issues, serves to move the pulp outward and at the same time to comb it between opposing teeth until it is reduced to a fluffy mass of individual fibers. Separation between upper and lower discs is ⅛ to ⅜ inch.

Bleach solution is added through three nozzles, at about two-thirds the distance from the inlet to the outside edge, where velocity is sufficiently high to atomize the solution to very small particles. Each fiber is coated uniformly. Pulp density for passage through the machine is between 35 and 40 per cent. Input is 1 hp. per day per ton of pulp, air-dry basis.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Product Catalogs and Bulletins Are Reviewed Starting at Page 78

If you write maker identify as IEN-4298

Get this Bulletin

With infinite variable speeds, The U. S. Varidrive Motor will boost your production, increase operator's efficiency and produce better quality work. 2 to 10,000 r.p.m. ¼ to 50 hp. Request new Bulletin.

U. S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Calif. Milford, Conn.

If you write maker identify as IEN-4299

H_2O anyone?

If you need or use between 200 and 100,000 gallons per minute of clean water, find out how Cuno's FLO-KLEAN filters can save you money. In hundreds of applications throughout industry, the fully automatic, continuously self-cleaning FLO-KLEANS have paid for themselves many times over by making raw river, lake, or well water fit for industrial use—and reclaiming process water. Write for the free FLO-KLEAN bulletin. The Cuno Engineering Corporation, Dept. 692F, Meriden, Connecticut.

3.2

If you write maker identify as IEN-4300

Dependable

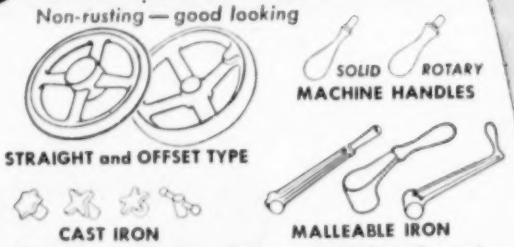
MEASURING & CHECKING EQUIPMENT

and Now

HAND WHEELS, KNOBS, HANDLES

Cadmium Plated READY TO DELIVER

Non-rusting — good looking



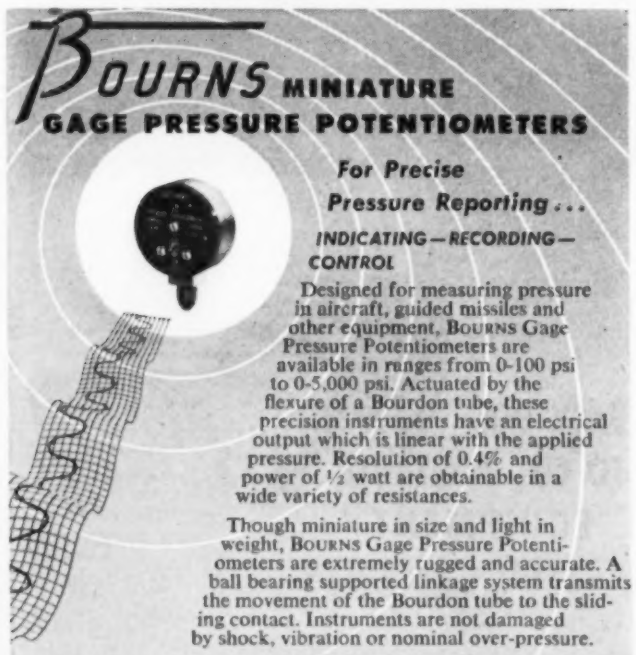
Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN-4301

BOURNS MINIATURE GAGE PRESSURE POTENTIOMETERS



For Precise Pressure Reporting . . .

INDICATING—RECORDING—CONTROL

Designed for measuring pressure in aircraft, guided missiles and other equipment, BOURNS Gage Pressure Potentiometers are available in ranges from 0-100 psi to 0-5,000 psi. Actuated by the flexure of a Bourdon tube, these precision instruments have an electrical output which is linear with the applied pressure. Resolution of 0.4% and power of ½ watt are obtainable in a wide variety of resistances.

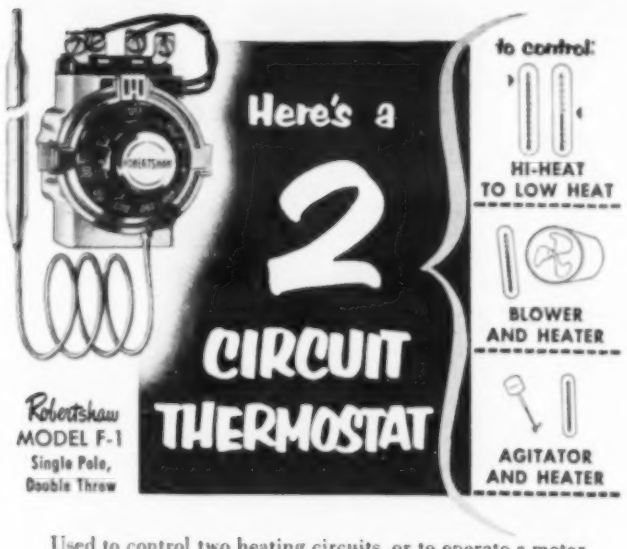
Though miniature in size and light in weight, BOURNS Gage Pressure Potentiometers are extremely rugged and accurate. A ball bearing supported linkage system transmits the movement of the Bourdon tube to the sliding contact. Instruments are not damaged by shock, vibration or nominal over-pressure.

BOURNS designs and manufactures other precision potentiometers for measuring position, differential pressure, absolute pressure, altitude and acceleration.

BOURNS is also, the creator and exclusive manufacturer of the TRIMPOT

BOURNS LABORATORIES
6135 Magnolia Avenue, Riverside, California
Technical Bulletin on request, Dept. 113

If you write maker identify as IEN - 4302



Used to control two heating circuits, or to operate a motor when such operation is required in combination with a heater or commercial laundry dryer, etc. where it shuts off current to heating element and turns on signal light.

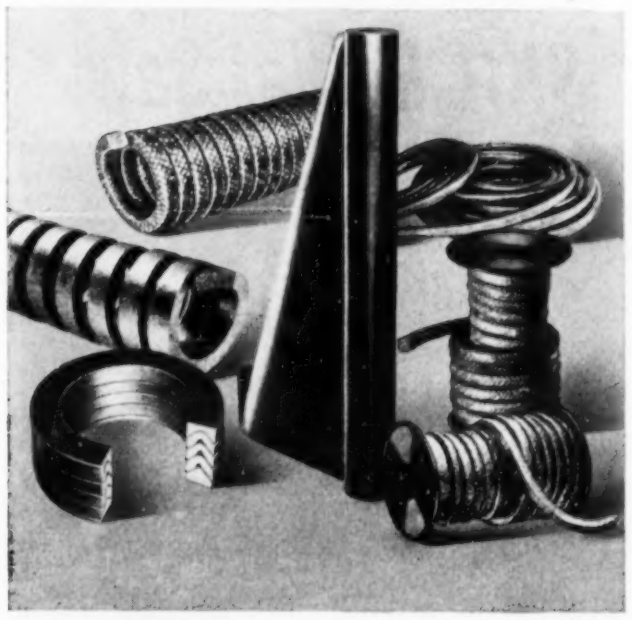
When thermostat calls for heat, high heat element automatically cuts in and holds until set temperature is reached. Main contacts are then broken automatically and low, or holding, element is cut in to function until drop in temperature again calls for heat. Maximum temperature range 550°F. Write for full information.

Robertshaw® THERMOSTAT DIVISION

Robertshaw-Fulton Controls Company, Youngwood, Pa.

If you write maker identify as IEN - 4303

HERE'S PACKING NEWS!



95% of all packing needs are met with R/M's BIG 7

If you've thought you had to carry 10, 20, 50 different types of packings, forget it! Your plant probably needs only 3 or 4. R/M now has a basic line of *just seven* types of field-tested packings engineered to give custom-built performance in 95 percent of all applications. We call them the "Big 7" R/M Packing Types. To accomplish this engineering feat, R/M called into play 50 years of know-how and experience, and all of the research, testing and production facilities of its seven great plants. Exhaustive field testing has proved that all but the very rarest packing application can now be met by the "Big 7" R/M Packing Types. Standardize on R/M Packings. You'll lower inventories, simplify ordering, reduce downtime. For details, see your R/M distributor.

R/M PACKINGS
RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

FACTORIES: Bridgeport, Conn. • Manheim, Pa. • No. Charleston, S.C. Passaic, N.J. • Neenah, Wis. • Crawfordsville, Ind. Peterborough, Ontario, Canada

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Teflon Products • Asbestos Textiles • Industrial Rubber Products • Abrasive and Diamond Wheels • Rubber Covered Equipment • Brake Linings Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose Sintered Metal Products • Bowling Balls

If you write maker identify as IEN - 4305

VALVE . . Diaphragm operated, timer control for boiler blowdown

Source: RICE INDUSTRIES
22-26 Clearview Drive, Pittsburgh 5, Pa.

Details on request

New combination of an Eagle interval timer and a steam powered diaphragm operated valve applies on a boiler blowdown to open and close at predetermined intervals. No operator attention is required, after a satisfactory setting has been made, to eliminate accumulations of foreign matter from the boiler and to keep the water clean. It is necessary to purge only a small amount of water at any given interval due to the repeat action that is controlled by the timer.

If you write maker identify as IEN - 4306

PAINTING . . Zinc chromate primer in pressurized spray can for touch-up

Source: WESTERN LITHOGRAPH CO.
602-6 E. 2nd St., Los Angeles 54, Calif.

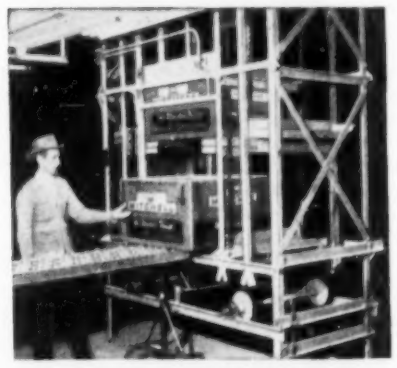
Shake well before using

Pressurized spray cans, holding 11 oz., are now available with the company's zinc chromate touch up primer. The material is particularly suited to cover exposed bolt, screw and rivet heads. It is for use by companies not equipped for spray painting as well as for on-the-line primer work. List price per can, in cases of 12 cans, is $2.50.

If you write maker identify as IEN - 4307

CONVEYING . . Vertical flight unit to handle containers between floors

Source: SAMUEL OLSON MFG. CO.
2420-22 Bloomingdale Ave., Chicago 47, Ill.



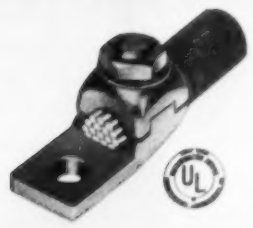
Industrial Subveyor

Flights secured on chain forming a closed loop comprise the moving portion of this new vertical conveyor. The assembly can be supplied in specified size and height for movement between the floors of a building to carry containers both up and down in continuous movement. The conveyor can be loaded and unloaded by hand or by automatic means. The unit illustrated handles 200-lb. air conditioners from a third floor to a shipping platform.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4308

QIKLUG CONNECTS QIKER



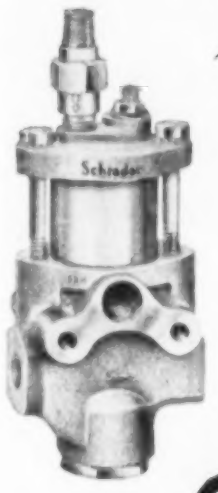
Compact, secure, and quick to install—with a common wrench—on all conductors through 2,000 Mcm. Reusable, too—as easy to salvage as to install.

Ask your Burndy Distributor

BURNDY
NORWALK • CONNECTICUT

If you write maker identify as IEN - 4309

Schrader Pilot Valves for Remote Control of Air Systems



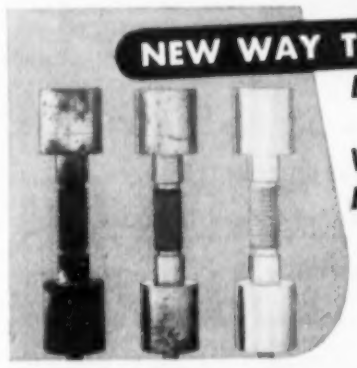
From any convenient spot, you can actuate air equipment by means of a Schrader Pilot Valve. Simply install in the main supply line at the point of operation, and add a small actuating valve at the point of control.

Pilot valves are available in two-, three- or four-way types, and can be supplied with timers to deliver air from a fraction of a second to as many as desired.

The Schrader catalog gives complete information on pilot valves, as well as the full Schrader line of air operated products. Write for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-45, Brooklyn 38, N. Y.

If you write maker identify as IEN - 4310

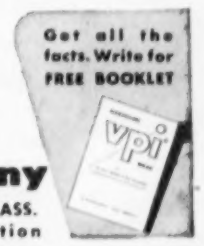


NEW WAY TO STOP RUST
Easily! Quickly! Without Slushing
MARVELLUM VPI® WRAP
Paper coated with a Volatile Corrosion Inhibitor

Without VPI — With VPI

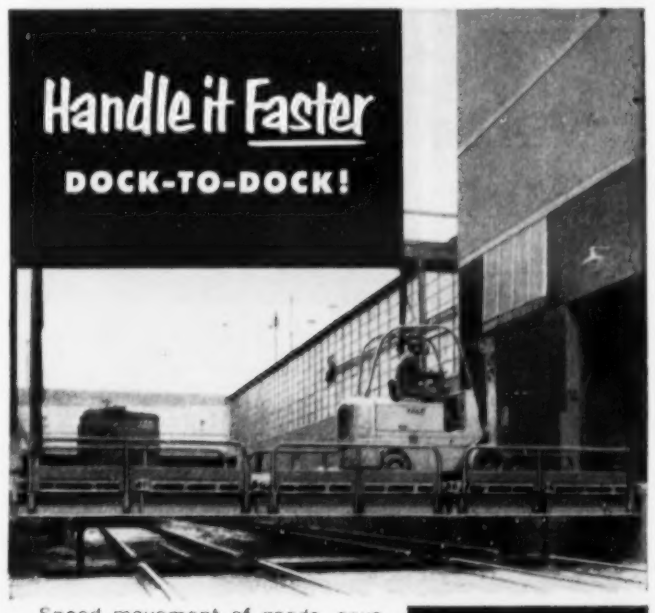
Look at these steel samples — they tell the story. After 3 years of unsheltered storage outdoors in an industrial marine atmosphere, only the VPI wrapped sample on the right is still bright and clean. The untreated sample on the left was wrapped in plain kraft, the middle one treated with a good rust-preventive oil and wrapped in Grade A barrier material. All were overwrapped with kraft-asphalt paper. *Your* steel or aluminum parts can be equally well protected from corrosion. VPI, developed for government use during the war, is now available to everyone. Economical, easy to use, VPI can save you time and money.

Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, producing and coating VPI Wraps. Also makers of a wide range of other barrier materials to meet your needs for product protection. Distributors in all major cities.



The Marvellum Company
22 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN - 4311



Speed movement of goods, save personnel time with safe, push-button operated Whiting Cross-Over Bridges. Three types to serve terminal needs: Overhead-Rise, Roll-Away or Ground-Level (as pictured) for faster truck movement across tracks. Ruggedly built for lasting service and low maintenance! Write for Bulletin MS-C-400.

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Illinois

WHITING
CROSS-OVER Bridges

If you write maker identify as IEN-4312

KILL moisture absorption

with DESPATCH ROD DRYING OVENS

For all types of baking, drying and ageing

★

Ovens can be decked—2-4-6 units

★

Automatically controlled—set it and forget it

★

Mesh shelving for total heat circulation

★

Conveniently portable for entire shop use

Electrodes in storage tend to pick up moisture—particularly low hydrogen, stainless steel and non-ferrous types. Despatch "WRD" Welding Rod Ovens provide lots of storage room in 10 spacious compartments and do a thorough, steady, dependable dehydrating job. *Specifications:* Outside dimensions—18" x 19" x 18". Max. Temp. 550° F; 1500 Watts; 250 lbs. rod capacity. *Write for Bulletin.*

DESPATCH OVEN CO. Established in 1902

337 DESPATCH BUILDING
MINNEAPOLIS 14, MINNESOTA

If you write maker identify as IEN-4313

3 reasons why DeLuxe Steel Shelving costs you less

The real cost of shelving is the erected cost

1. **Fewer Parts**—DeLuxe has designed one part where ordinary shelving uses three. Example, our bin-type "I-Beam" upright. *Fewer parts mean fewer man hours to install.*
2. **80% Less Bolts**—DeLuxe shelving uses patented, boltless shelf brackets, thus requires *no tools* for either installation or adjustment.
3. **100% Adjustable**—Shelves in each section are independently adjustable, without disturbing other contents. DeLuxe shelving erects on the spot, in position where you want it . . . the only shelving that does all this.

There is a DeLuxe factory representative in your area who will give you our engineering, planning and layout service without obligation. Write today for free catalog.

DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

DeLuxe

For over 25 Years Manufacturers of: Storage Shelving
Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN-4314

Save Time—Speed Assembly WITH KELLER AIR TOOLS

Wherever there are screws to drive or nuts to set, these lightweight tools make work easier and faster, and reduce labor costs.

Consume less air

Weigh less

Interchangeable parts

Reduce operator fatigue

Attachments, clutches, finders, and bits for every purpose

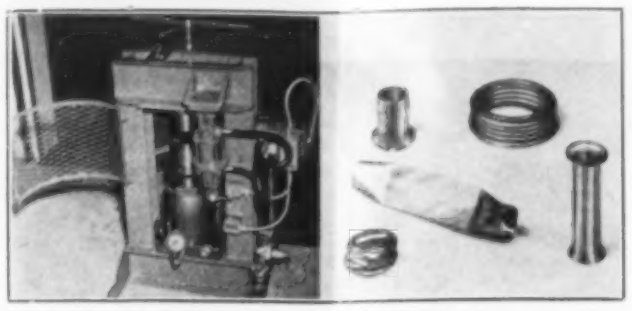
Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN-4315

TESTING . . Air hydraulic stand checks tubing in compression to 50 ton

Source: DOMMERS CO.
426-30 S. Cherry St., Wallingford, Conn.



Wire guard protects operator

Test specimens of tube, made of carbon steel or stainless steel, are placed between the anvils of this new stand for compression test. The stand will take a piece to 3 in. in diameter. It is particularly designed to check electrically welded tubing employed in the manufacture of furniture, heat exchangers, pressure vessels, automotive parts.

Power is supplied by connection to a 60 to 80-lb. shop air line. Control is by pushbutton and solenoid. Pressure can be set at a regulator to suit the operation.

If you write maker identify as IEN-4316

METER . . Differential equipment indicates, records pipe line flow

Source: BUILDERS-PROVIDENCE INC.
384 Harris Ave., Providence 1, R. I.

Ask for Bulletin 300-J14

Model AFUAQ is a new assembly in the company's Flo-Watch equipment to meter the flow of liquids, steam, air, gas. Indicators, recorders, totalizers are actuated by standard differential producers such as venturi tubes, nozzles, orifices in the pipe line. Application can be made also with Kennison open nozzles, flumes and weirs as metering elements.

Changes in flow through the differential producer act to position a float in a mercury well. This position is transmitted positively through adjustable direct linkage to indicate and record. The mechanism employs a pressure tight sealed bearing. Changes in position of the float are transmitted by rotation of a burnished shaft from inside the mercury well to the instrument mechanism with negligible friction loss. Totalizer registration is in direct proportion to flow.

Identify as IEN-4317

Individual control to 20 rooms or areas can be maintained by a new Radio Corporation desk-top consolette for recorded, radio, local-origin programs and announcements. The equipment can be expanded to control 60 areas. Type MI-14937 is the designation. Dimensions are 45 by 16 by 11 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

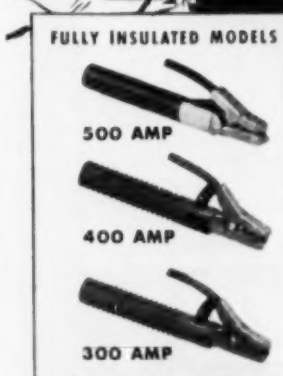
If you write maker identify as IEN-4318

...its Cooler

THE PROOF IS RIGHT IN THE PALM OF YOUR HAND

CADDY® ELECTRODE HOLDER

FULLY INSULATED MODELS



500 AMP

400 AMP

300 AMP

OTHER MODELS ON REQUEST!

FEATURES:

- CADWELD connection – cable to jaw is a 100% conductivity solid copper connection. It is permanent – cannot melt out, burn out, loosen or corrode.
- Short completely replaceable beryllium copper jaw has 80% conductivity.
- Lightweight durable steel body carries no current.
- Cable gripper prevents broken strands and flexing at the connection.
- Operator's hand is over fully insulated cable, air space and handle ribs.
- Fiberglass spring cover withstands 1200° F heat radiation from the arc.
- NO Shocks – Handle screws eliminated.
- Replaceable fiberglass insulators.

"CADDY" ARC WELDING ACCESSORY DIVISION
ERICO PRODUCTS, INC. • 2070 E. 61st PLACE • CLEVELAND 3, OHIO

If you write maker identify as IEN-4319

FORCE 5 Action

One machine fills scores of numbering needs . . . provides consecutive, duplicate, triplicate, quadruplicate or repeat numbering at the flick of a finger. *Write for prices and catalog.*

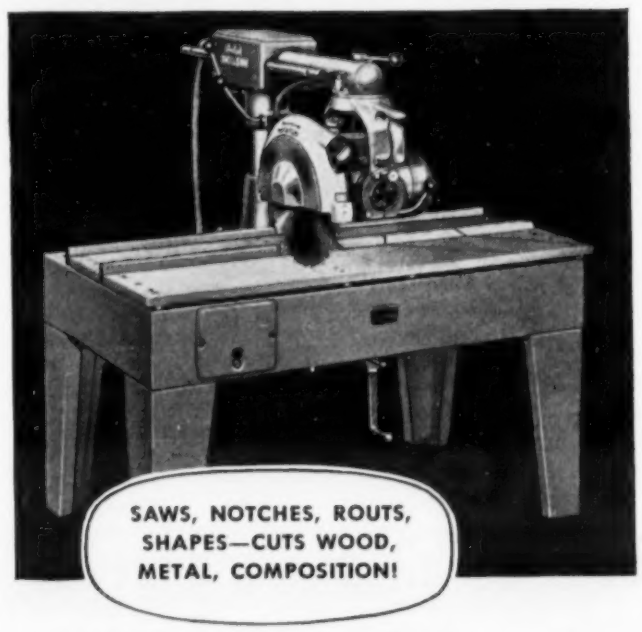
WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

The FORCE Hall of Numbers

If you write maker identify as IEN-4320

LAST WORD IN PRODUCTION CUTTING

SKIL Radial Saw



Here's one of the most versatile tools to step up production in your factory. Actual production experience proves SKIL Radial—with retractable arm—far better than stationary arm type of radial saw. Area above work table is free from obstruction. Every adjustment can be reached and indexes read from front of work table. No ducking or dodging around the arm.

The SKIL Radial is of rugged construction. Adjustments lock saw in position for greatest accuracy on production sawing. Adjustments made instantly for *all* types of cuts, routing and shaping. Arm designed to prevent accumulation of resins and sawdust.

There's a SKIL Radial Saw to meet every requirement

New design features make a complete construction workshop—easy to set up for all cuts. Easily operated with speed and precision by one man.

SKIL Radial Saws are available in 2, 3, 5 and 7½ h.p., with 14" and 16" blades, 1 or 3 phase, all voltages, manual or magnetic control.

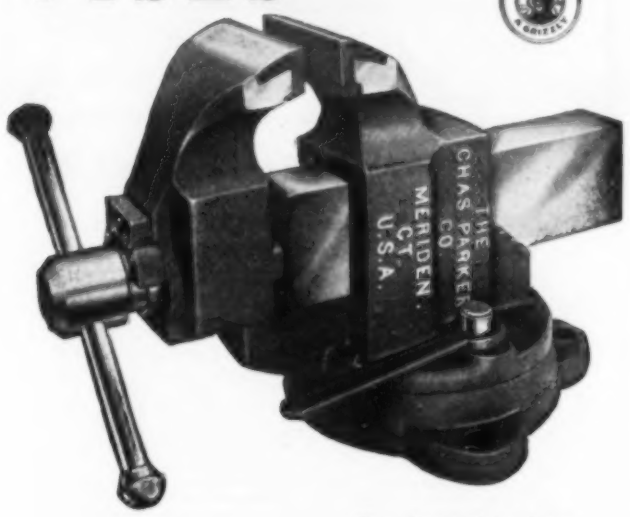
See Your Distributor for Complete Information or Call Your Nearest SKIL Factory Branch

Made only by SKIL Corporation
formerly SKILSAW, Inc.
5033 Elston Ave., Chicago 39, Illinois
SKIL Factory Branches in 34 Principal Cities
In Canada: Skiltools, Ltd., 3601 Dundas Street West, Toronto 9, Ontario

SKIL PORTABLE TOOLS

If you write maker identify as IEN - 4322

PARKER VISES



The Complete Line

Write for catalog

Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

STOCKED BY DISTRIBUTORS EVERYWHERE

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as IEN - 4323

At Last!

For Conferences—
Sales Meetings—
Staff Meetings—
Lectures

A TABLET ARM CHAIR THAT *FOLDS!*

The Greatest Advance in the History of Folding Chairs

Undoubtedly, you've wished for a chair like this many times. Now it's here—perfected—ready to go to work for you. Here is permanent convenience and comfort adapted for emergency use—the greatest advance in the history of folding chairs.

The tablet arm is a built-in feature of the chair, not an attachment. It is strong, easy to operate, a marvel of engineering ingenuity (patent pending). For ordinary chair use when the arm is not needed, it folds down, out of the way, beside the chair, and flat *against* the chair for quick, safe stacking. The flat, folded depth of the chair is only 3 inches. The chair can be folded or unfolded in a matter of seconds. It is exceptionally easy to get into and out of this tablet arm chair.

Built throughout with all the famous Clarin insistence on utmost quality, the Clarin Tablet Arm Folding Chair will give years of faithful service. It is a supremely strong X-type chair, self-leveling, welded to insure exceptional strength and quietness. Its cushioned rubber feet, a Clarin exclusive, can't mar the finest floor. It comes with Clarin's famous reinforced seat of 5-ply plywood, or it can be had with fine quality leatherette on seat and back, or on seat alone. Available in wide range of frame and upholstery colors.

Clarin Mfg. Company, Dept. 30,
4640 W. Harrison St., Chicago 44, Ill.

Clarin

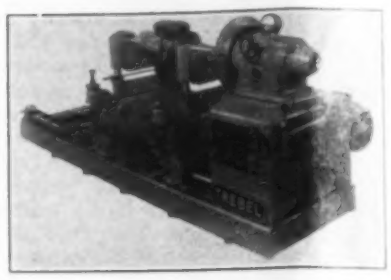
There is a Clarin Folding Chair for every purpose and need. Write today on your institution's letterhead for beautiful, new, FREE Catalog of the complete line.

SINCE 1925 . . . THE ARISTOCRAT OF FOLDING CHAIRS

If you write maker identify as IEN - 4325

BALANCING . . Dynamic machine reads unbalance amount and position

Source: KURT ORBAN CO.
204 E. 43rd St., New York 17, N. Y.



Made in Germany

Counter motion, controlled by two hand wheels, one for angle and the other for magnitude, is introduced into the bearings in which a test assembly is rotating in this new Trebel machine until a smooth running condition is obtained. At this point the machine will indicate the magnitude as well as the location of unbalance in oz. in. reading. Accuracy is within 0.000025 in. of displacement of the center of gravity. The machine is available in 11 models with work capacities ranging from ¼ to 22,000 lb. and diameter from 7 to 78 inches. Additional units in the line are available in the same capacity range with outside diameter maximum at 98½ inches.

Assembly consists of a bed, headstock, drive motor and two independently movable supports. These supports carry open bearing rollers on which the piece is rotated or can be equipped with half shoes for babbitt bearings or V-type holders for ball bearings. Height is adjustable to suit the work diameter. Unbalance indications are electronically amplified to provide the final reading. The work is driven positively by a dog to engage the faceplate on the machine headstock.

If you write maker identify as IEN - 4326

VAPOR COLLECTOR . . For mercury, saves the mercury, neutralizes vapor

Source: ACME PROTECTION EQUIPMENT CO.
3035-39 W. Lake St., Chicago 12, Ill.

For worker protection

Mer-Vac is a new special vacuum machine to pick up mercury that has been spilled and to use in areas containing mercury vapor. The mercury-laden air is drawn in by a motor driven vacuum blower. It enters through a trap that retains solid particles of the mercury and then passes through a canister and filter where any vapor is neutralized by the company's Mer-Vac fluid. This is the same fluid that has been employed for a number of years in the company's gas mask canister for use by workers exposed to mercury vapor.

The equipment includes several designs of intake head, a supply of the chemical, a two-part plastic wand, a 15-ft. Hycar suction hose and the wheel-mounted machine with its mercury trap, canister, filter and motor driven vacuum pump. Mercury that collects in the trap can be removed from time to time. Construction is in special materials for the parts that must come in contact with the mercury and chemicals. An automatic signal is provided to tell when to replace the content of the canister after a period of service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4327

FREE *Send for your copy today*

NOW . . . You can choose the RIGHT Industrial Work Glove for EACH Job . . .

by using the handy Hood Performance Chart

Chart shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves; catalog contains eleven more pages of illustrations and description of Hood Industrial Gloves; the choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as IEN - 4328

Boost Low Voltages

Install an Allis-Chalmers dry-type transformer right next to the load it serves — on overhead trusses, walls, platforms, or directly on the machine. You'll get higher motor, lighting, and thermal efficiency, resulting in economical utilization of power.

Installation is easy because knockouts are provided for connecting conduits directly to transformer case. System cables are connected to transformer terminals in roomy compartments. No vaults or expensive enclosures are needed. Install A-C dry-type transformers and forget them except for periodic inspections. No insulating liquids to mess with; no gauges or gaskets to fuss with.

Call your nearest A-C district office for full information or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3958

ALLIS-CHALMERS

If you write maker identify as IEN - 4329

ELIMINATE WIRES

through use of

DU PONT CONDUCTIVE COATINGS

Easily and rapidly applied by spray, brush, dip, stencil to metals and non-conductors, they give a conductive surface of low resistance. One troy ounce covers about 3 sq. ft. Use them in printed circuits for radios, amplifiers, switchboards, meters; for capacitors and couplings; for static shielding to replace foils and cans; for resistors and solder seals. Save hours of time, $$$$ of cost! For more information, send for Bulletin CP-2-1247. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT ELECTROCHEMICALS

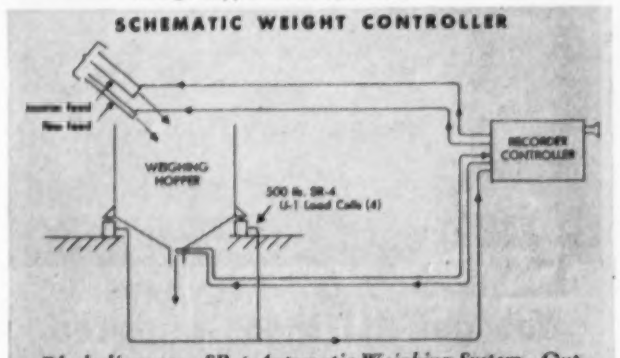
DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

If you write maker identify as IEN - 4330

SR-4® Devices in Industry — Uses Unlimited

Problem: How to weigh automatically an expensive plastic from storage hopper into freight cars.



Block diagram—SR-4 Automatic Weighing System. Outputs of four 500 pound U-1 SR-4 Load Cells are totalized into strip chart recorder-controller which furnishes a complete record of each weighing cycle including final and initial weights.

Solution: A leading chemical company does it rapidly and accurately with a fully automatic SR-4 Weighing System.

This SR-4 System is giving all of these advantages:

- System will pay for itself quickly due to its very high accuracy in weighing large daily shipments of such an expensive material.
- Speed of operation (less than two minutes per 1000 lb. cycle) cuts costs.
  - Only one operator needed . . . just part time.
  - Automatically furnishes complete record of each weighing.
  - Rugged construction minimizes maintenance.

For latest technical information please write to Baldwin-Lima-Hamilton Corp., Dept. 3013, Philadelphia 42, Penna.

TESTING HEADQUARTERS

BALDWIN-LIMA-HAMILTON
Philadelphia 42, Pa.

If you write maker identify as IEN-4331

ONE PAIR *Guaranteed* TO OUTWEAR TWO PAIRS OF CANVAS GLOVES!

- Durable plastic dots double the wear, cut your work-glove costs at least 40%!
- Rugged . . . yet soft, flexible, comfortable!
- Phenomenal results reported by big industrial users!

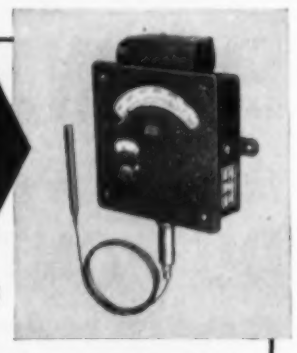
Write for full information and factual proof of "Plastic-Dot" guaranteed performance!

"PLASTIC-DOT" WORK GLOVE

RIEGEL TEXTILE CORP. • 260 MADISON AVE. • N. Y. 16, N. Y.
Atlanta • Boston • Chicago • Dallas • Detroit • Jackson (Miss.) • Los Angeles • Pittsburgh

If you write maker identify as IEN-4332

A WIDE RANGE INDICATING CONTROL



TYPE E8N

The type E8N indicating control is ideal for installations where an exact temperature reading must be readily available at all times. It is a broad range, precision-built unit that shows the exact temperature of the thermal bulb at all times. The E8N is compensated accurately for wide ambient temperature changes, is simple in design and contains no delicate mechanisms. Various models are available covering ranges of 300° F to 600° F between limits of -150° F to 600° F. On-off differentials available as low as .25° F. Complete details and electrical specifications are contained in bulletin #4-1, write for it today.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN-4333

You get ALL these features when you buy PET DRILLS!

If you want the best, take an extra look at the PET Superduty Drill above! Here's a continuous-duty drill—built to *work* right and *handle* right.

And, the price is right, too! All features shown are *standard* in PET Superduty Drills—at a *standard drill price!* Complete line of 54 ¼", ⅜" and ½" models gives you wide selection—in pistol or saw-type grip. Use coupon below to get complete facts!

PORTABLE ELECTRIC TOOLS, INC., 320 W. 83rd St., Dept. IE-43, Chicago
In Canada: Portable Electric Tools, Ltd., 452 Birchmount Rd., Toronto

MAIL COUPON FOR FREE BULLETIN

Please send me free PET Superduty Catalog and name of nearest distributor.

Name _____ Title _____
Company _____
Address _____
City _____ State _____

If you write maker identify as IEN-4334

TRUCK . . Two-wheel hand design, tubular steel frame rates to 700 pounds

Source: MILWAUKEE TRUCK & CASTER CORP.
6510-14 W. River Parkway, Milwaukee 13, Wis.

Ask for Catalog M-123

The company announces a new line of hand trucks mounted on solid rubber, semi-pneumatic or pneumatic wheels with any one of three types of handle. Two are shown in the illustration. The third is a centrally located tubular stub extension with a protective plastic cap at the top center of the one-piece welded frame for single hand operation.

The truck can be equipped with a solid or open nose plate. Standard wheel equipment is Gleason manufacture. The axle support brackets in most of the designs are shaped so the truck can be pulled up a stairway or over a curb. The frame is made of 1-in. steel tube in welded assembly. The axle is ⅝-in. cold rolled steel.

If you write maker identify as IEN-4335

SAWING . . Hacksaw machine for general use, rates 10 by 10 inches

Source: PEERLESS MACHINE CO.
1602 Junction Ave., Racine, Wis.

Open frame design

New machine, featuring rigid construction and adaptability for general purpose use, has been developed to replace the company's previous 9 by 9-in. power saw. It retains the previous machine's operating characteristics and controls. It holds the work square or at any clamping angle to 45 degrees. A centrifugal pump circulates coolant from a tank in the base. Wide shoulders on the frame maintain alignment and rigidly control the action of the saw blade. Replaceable hardened and ground steel bearing shoes are part of the frame construction. The frame is equipped with bearings that can be removed and replaced when this becomes necessary.

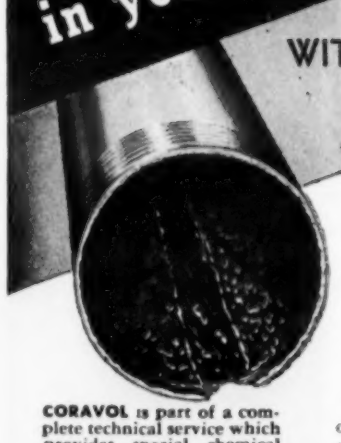
Identify as IEN-4336

Equip your motor vehicle trucks with one of the new one-man dual-wheel dollies, made by Alexander-Tagg Industries, and you may have done your company a favor. If a truck blows a tire on the road the truck operator applies his regular jack, pushes the dolly in place, releases the wheels and rides them easily out from under. He is not required to do any lifting other than to operate the jack to start and finish the job.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4337

Stop CORROSION in your Steam System WITH CORAVOL



When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

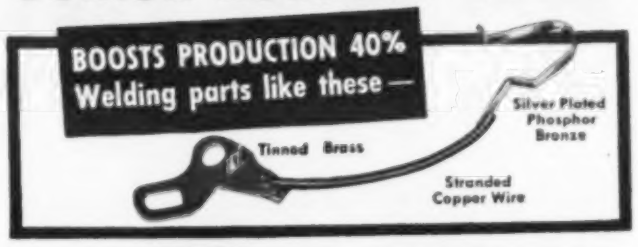
Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2063024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN-4338

Schick Reduces Costs



with RAYTHEON WELDPOWER*

Speaking for Schick Incorporated, makers of Schick Electric Shavers, assembly foreman A. Maravnick says: "We cannot be too enthusiastic about equipment that does such a fine job! Raytheon WELDPOWER has eliminated soldering on this operation, increased production 40%. The operator's comment is *what a beautiful set-up* and the Inspection Department is also highly pleased."

Investigate the many advantages of welding ferrous, non-ferrous or dissimilar metal parts with Raytheon Condenser Weldpower Control Units. Available in 3 sizes with appropriate Weldpower Heads. Send sample parts or write for details.
Address Dept. 6270 —IN-4
*Reg. U. S. Pat. Off.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 17 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN-4339

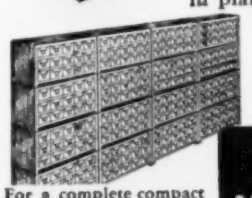
BUDA HYDRAULIC "TWO-SPEED" JACKS

✓ SIMPLE ✓ SAFE ✓ DEPENDABLE

Precision control in raising or lowering any load—two lifting speeds—rugged design—simple hydraulic operation are features of BUDA Hydraulic Lifting Jacks. Write for Bulletin and complete details on Buda Lifting Jacks.
The Buda Company, Harvey, Illinois.

If you write maker identify as IEN-4340

Here's the newest, low-cost multi-purpose storage cabinet—strong enough to hold 15 drawers full of lead, yet minimum light in weight. The see-thru clear plastic drawers (¾" deeper than average size) show at a glance the parts or equipment they are storing. Increased convenience from the deeper drawers—15 drawers hold any and all parts, office supplies, etc.—for use in plant, office or home.



- Removable Dividers in Each Drawer
- Electric Weld All Steel Cabinet
- Name Plate Slot in Each Drawer
- Safety Catch Prevents Any Spilling

For a complete compact storage room, you can stock E-Z-C Cabinets up, side by side, or back to back. Send for descriptive literature.

KLEER-VUE MANUFACTURING CO.
636A PENN AVE.
PITTSBURGH 22, PA.

If you write maker identify as IEN - 4341

NOW another new development in Micro-Fog lubrication by NORGREN

for

- SMALL AIR DEVICES
- GEAR CHAMBERS
- BEARINGS

NEW FEATURES

CONSTANT OIL LEVEL
rate of oil feed not affected by oil supply.

COMPLETE VISIBILITY & CONTROL OF OIL FEED
no guess work.

OIL FEED CONTROLLED BY AIR
gives very uniform rate of oil feed.

WRITE, NOW, for COMPLETE DATA

C. A. Norgren CO.
3432 So. Elati St., Englewood
IN COLORFUL COLORADO
Valves • Filters • Regulators • Lubricators • Hose Assemblies

PIONEER AND LEADER IN OIL FOG LUBRICATION FOR 25 YEARS

If you write maker identify as IEN - 4342

FOR THE **Roughest** JOBS...GET THE **Toughest** GLOVES

U.S. INDUSTRIAL "HEAVYWEIGHTS"

CANVAS LINED OR ALL NEOPRENE

- Heavy construction for protection from the most severe working conditions.
- Withstand gasolines, oils, greases, acids, corrosive chemical solutions.
- Protect against cuts, abrasions, splinters.
- Curved finger construction for comfortable, natural movements.
- High flexibility.
- Better gripping reduces spoilage and accidents.
- Longer lasting.

#1367—Hvywgt
#1377—Ltwgt.

Canvas Lined, Neoprene Dipped:
No. 1367 U. S. Royal Knit Wrist. Full-cut, eight-ounce canton flannel inserts. One size only.

No. 1374—12 in.
No. 1375—14½ in.
No. 1379—14½ in. reinforced
One size only.

Unlined, Neoprene Dipped:
No. 1398 Non-Slip Finish for positive grip. (Smooth Finish available on special order.) Sizes 9 through 12.

#102—Ltwgt.—10½ in. #1311—Medwgt.—10½ in.
#1398—Hvywgt.—14 in. #1399—Hvywgt.—18 in.

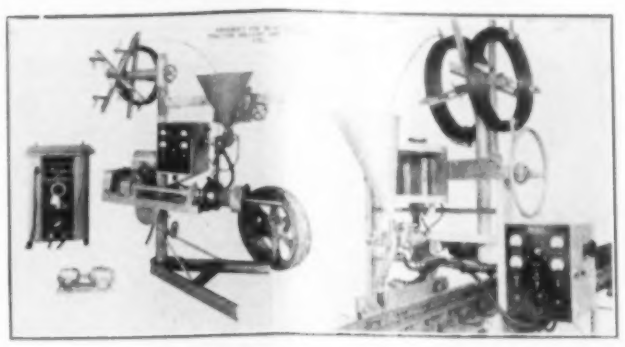
United States Rubber Company will be happy to analyze your glove needs and recommend the U. S. Glove for you. Call your nearest "U.S." branch or write United States Rubber Company, P. O. Box 1453, Providence, R. I.

U. S. INDUSTRIAL GLOVES
Product of UNITED STATES RUBBER COMPANY

If you write maker identify as IEN - 4344

WELDING . . Automatic arc machine applies on circular and on flat work

Source: SIGHT FEED GENERATOR CO.
East 3rd St., Dept. 38, West Alexandria, Ohio



Continuous or intermittent action

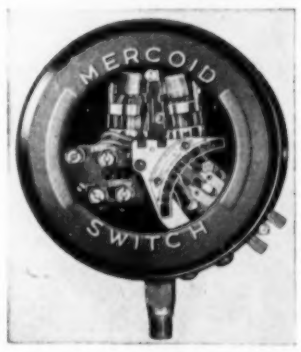
Set up for circular work to the left and for flat work to the right is shown in the illustration of new automatic arc equipment for build up and for hard facing applications. Welding power is supplied by one of the company's 500-amp. ac. machines. A motor generator set provides 110-volt dc. for the welding head motor and the carriage motors. Welding wire feeds from a reel through the head. Flux is supplied from a hopper.

On circular work the dc. feed motor drives a rotating shaft. This shaft can be adjusted vertically to take pieces of varying diameter and can be set at an angle with horizontal. On the flat assembly the head travels on rollers driven by the dc. motor to move the machine along a track on both sides of the work. This track is made up of 10-ft. sections and is normally supplied in a 40-ft. length. The bed is 28 in. in width and clearance under the carriage is 11 inches. The machine applies an arc of 18 to 20 volts at about 350 amperes.

If you write maker identify as IEN - 4345

CONTROL . . Pressure operated to actuate two electric circuits

Source: MERCOID CORP.
4203 W. Belmont Ave., Chicago 41, Ill.



Ask for Bulletin 5P

Type DA-400 is a new series-pressure control in which a single bourdon tube connects to two independently adjustable magnet operated mercury switches of the company's own design. A calibrated dial with two outside adjustments is provided to set the pressure at which each switch operates. Pointers indicate the setting. The control is available in ranges from 0 to 30 to 300 to 2,500 pounds. The contacts rate 20 watts on 110 volt ac. or dc.

Application can be made to close one circuit at high pressure and another at low pressure with both circuits open over the operating range. It will serve an electrical interlock to open one circuit as pressure rises and the second circuit as pressure drops below the operating range. It will provide two-stage control by opening or closing one circuit on a rise in pressure and the second circuit on a further rise in pressure in a line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4346

Stop HACKSAWING by Hand!

use

HAND-I-HACK* portable power hack saw

Cuts at any angle up to 45°.

Cuts 3" square steel bar.

HAND-I-HACK eliminates the sweat and unproductive cost of manual hacksawing. Rugged—light in weight—Hand-I-Hack can be carried anywhere in the shop to cut bar stock, angle iron, flexible metal tubing, thin-wall tubing—even 4" I-beams.

Attached to the work, it saws in any position: horizontal, vertical, angular, *upside down*. One-quarter HP motor plugs into wall socket. Motors available for all standard circuits.

Cuts are accurate—saves stock. First cost is low—operating and upkeep cost negligible. Another saving: uses low-cost high speed *hand blades*.

● *Write for catalog and name of dealer.*

*T.M. Reg. U.S. Pat. Off.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automatic Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 4347

EX-CELL-O HYDRAULIC POWER UNITS

For Special Purpose Machines

Ex-Cell-O Quill-Type Hydraulic Power Units provide a compact, flexible source of power for feeding, rotating and retracting cutting tools. They are especially suitable for automatic drilling, reaming counterboring operations. Three standard units are available—styles 28-A, 21 and 20, shown below. For full information send for Bulletin 45828.

53-9

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

If you write maker identify as IEN - 4348

free Bulletin

ON **Delpark**

FULL FLOW, SELF CLEANING
INDUSTRIAL FILTRATION

Here's literature that can help you solve filtration problems in your plant.

The famous Delpark Industrial Filter is designed for the maximum of filtration with the minimum of maintenance.

Full flow, self cleaning, continuous, fully automatic, Delpark Industrial Filter applications include the filtration of coolants, quenching oils, paint spray-booth water, air-conditioning wash water, and numerous other applications.

Write today for this free booklet and acquaint yourself with the facts on the finest in Industrial Filtration.

Backed by More Than 30 Years in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVENUE LEBANON, INDIANA

If you write maker identify as IEN - 4349

Over 85% of the torque wrenches used in industry are

Sturtevant TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces
...inch pounds
...foot pounds
(All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. Sturtevant CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 4350

Twice the Grip...

WHEN GRIP COUNTS

BIDDLE HI-NUTS

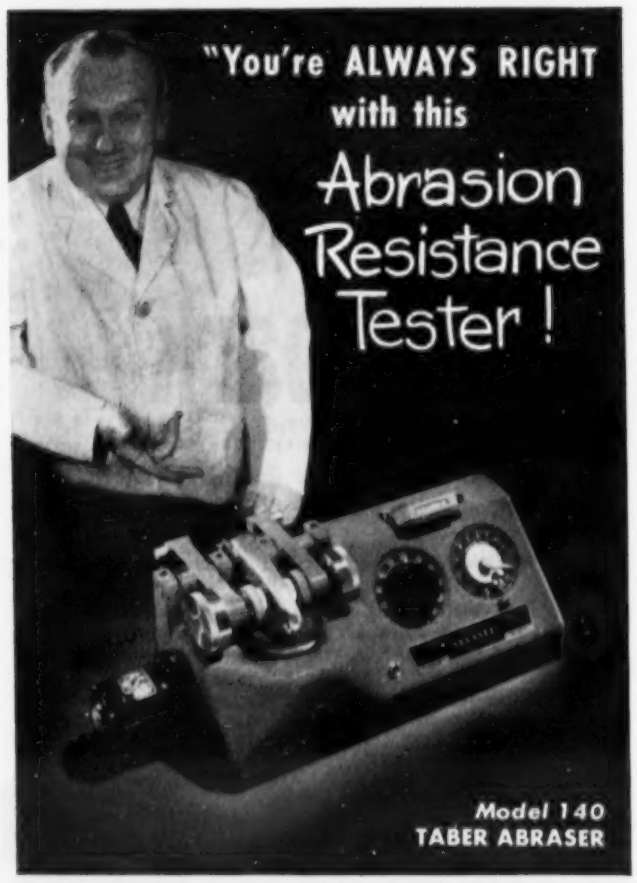
BIDDLE HI-NUTS are made for greater gripping power. Where vibration is high, where motion takes over, the additional gripping power of BIDDLE HI-NUTS takes control. Made from B 1113 steel, machined from the bar, BIDDLE HI-NUTS are threaded to SAE Specifications. Sizes from ½ inch to 1¼ inches, heights from 15/16th to 1¾ inches, with diameters across the flats from ¾ to 1¾ inches. Put extra grip into the jobs where extra grip counts . . . with BIDDLE HI-NUTS.

Write today for more complete information and specifications.

NATIONAL SCREW MACHINE PRODUCTS ASSOCIATION

BIDDLE SCREW PRODUCTS COMPANY
SHERIDAN, INDIANA

If you write maker identify as IEN - 4351



Here's the instrument that the whole world accepts as the standard abrasion or wear tester for plastics, paints, linoleum, rubber and textiles. Simulates actual wear conditions during test and gives an accurate numerical index for your report. Send for booklet below for all the facts.

SHEAR HARDNESS and DIAMOND SCRATCH TESTER

Tests quality of plastic material and plastic coated surfaces to resist scratches, digs, scrapes and other physical damage not classed as normal wear. Handles specimens from thin plate to ¼" thickness. Used everywhere for precision perfect tests.

The Taber STIFFNESS GAUGE

Determines both INITIAL and NORMAL stiffness of sheet and wire specimens and gives report from DIRECT READING. Precision shear cuts exact specimens from paper or plastic (up to 20 pt.) to eliminate possible variation in results.

Taber INSTRUMENT CORPORATION
SECTION 15
111 Goundry St., North Tonawanda, N. Y.

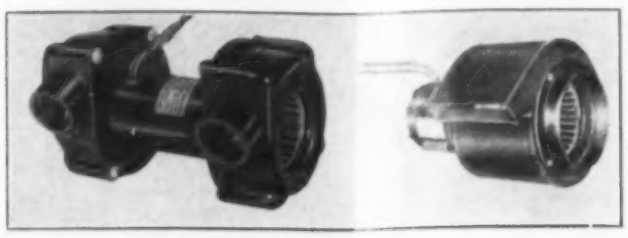
- ☐ Please send me booklet on Taber Abraser
- ☐ Please send me booklet on Taber Hardness and Scratch Tester
- ☐ Please send me booklet on Taber Stiffness Gauge

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

If you write maker identify as IEN - 4353

VENTILATING . . Miniature blower circulates air in an equipment housing

Source: INDUCTION MOTORS CORP.
55-15 37th Ave., Woodside 77, N. Y.



Meets Military Specifications

Single and double assemblies, with integral motor, are included in the company's new line of miniature blowers. The double unit, known as Type BC1615B-12, rates 22 cfm. of free air with motor operation on 115-volt 60-cycle ac. This unit weighs 26 ounces. The motor shaft also carries the blower impellers and is mounted on sealed ball bearings. The line is available with induction or synchronous motors ranging from 0.001 to 0.1 horsepower.

If you write maker identify as IEN - 4354

FOUNDRIES . . Binding materials, parting, and castings impregnator

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

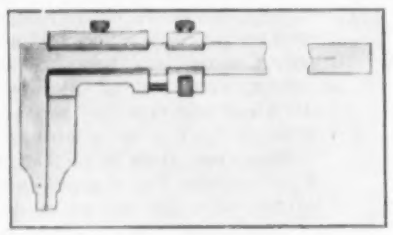
Technical data upon request

The company announces assembly of a new "foundry package" containing four materials for foundry use. They include a Type S-1054 phenolic resin binder for shell molding, a Type SM-55 silicone parting agent to release shell molds from their metal patterns, a Type-12353 liquid core binder resin and a Type-3255 Permafil impregnating material for porous castings. The materials are available individually in specified quantities if package assembly is not required.

If you write maker identify as IEN - 4355

GAGE . . Vernier caliper in stock capacities of 10 to 96 inches

Source: GLOGAU & CO.
1914 Birchwood Ave., Dept. B, Chicago 26, Ill.



Made in Germany

The company announces extension of its stock of Schweitzer vernier calipers, previously described IEN-6394-37. The present stock range is from 10 to 96 inches. Each assembly is made of hardened chromium steel with machine divided graduations for readings to 0.001 inch. The jaws are hardened, ground and lapped. The vernier slides are precision fitted. Each instrument is packaged in a wood case. Also available are similar precision vernier height gages in sizes from 12 to 48 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4356

Lev-R-Matic DRIVE

FORK LIFT TRUCKS

Low Cost Handling!

- STAND-UP AND SIT-DOWN MODELS
- GAS OPERATED—NO GEARS TO SHIFT
- A SIZE TO FIT YOUR NEEDS

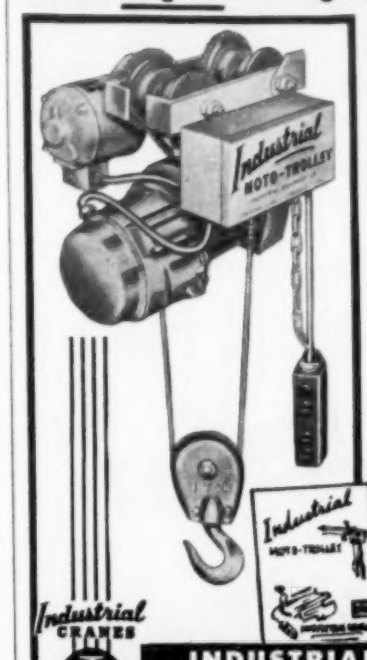
Write for complete specifications or contact your nearest Branch Office.

MOBILIFT CORPORATION — MOBILIFT Lev-R-Matic DRIVE
835 S. E Main St., Portland 14, Oregon
2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.
2724 Taylor St., DALLAS • 113 Spring St. N. W., ATLANTA
2730 San Pablo Ave., BERKELEY

If you write maker identify as IEN - 4357

Industrial MOTO-TROLLEY

The Original Packaged Motor Driven Trolley



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST . . .

Adjustable to Accommodate Wide Variety of Beam Sizes

- Crown-tread machine steel wheels with hardened drivers.
- Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
- Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
- Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
- 4-button control station operates single speed trolley and hoist motions.

Write for Literature

INDUSTRIAL EQUIPMENT CO.
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

If you write maker identify as IEN - 4358

Tape it with Behr-cat®

Super strong, filament-reinforced, pressure-sensitive BEHR-CAT Strapping Tape is the modern way to wrap and pack just about anything—boxes, tubing, lumber, plate glass, metal parts, etc. It goes on in a jiffy—sticks at a touch—no special tools required. Comes off just as easily too—a strong point with your customers. You can speed up packing and shipping operations all along the line with BEHR-CAT Strapping Tape.

TRY A SAMPLE ROLL

Put BEHR-CAT Strapping Tape to the test. Write Behr-Manning Corp., Troy, N.Y., Dept. IEN-T4.

For Export: *Norton Behr-Manning Overseas Inc., New Rochelle, N. Y., U. S. A.*

In Canada: *Behr-Manning (Canada) Ltd., Brantford.*

BEHR-MANNING *division of NORTON Company*

▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN-4360

ONLY SAFETY BELT HOOKS

have the patented binder bars — are rigidly mounted in double steel strips that hold hooks permanently in alignment, assuring uniform tension across the belt, maximum traction and long belt life. Moreover, these bars protect belts—lap over belt ends, prevent fraying, prevent hooks from pulling out. This better belt lacing comes in 5 sizes. It can be applied with any standard lacer or lacing machine, or, can be applied with an ordinary hammer by using the inexpensive Safety Tu-way Lacer.

Write for Circular

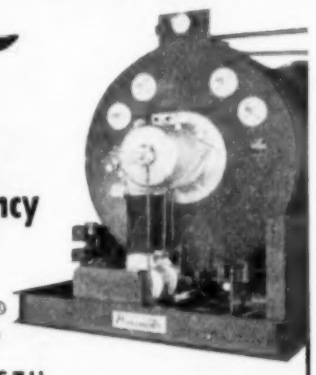
Safety BELT-LACER CO.
5394 N. Menard Ave.
Chicago 30, U. S. A.

If you write maker identify as IEN-4361

Now-

83% guaranteed minimum efficiency with No. 6 oil

ANOTHER *Powermaster*® "FIRST"



● Compare ASME tests on *Powermaster* with those of any other boiler. You'll see why the automatic *Powermaster* with VORIFLOW combustion is your best buy in packaged boilers. *Powermaster* efficiency actually *increases* at less than full load (which is normal field operation). Start cutting your steam costs today by getting full information on the installation, operating, and maintenance economics of *Powermaster* —15 to 500 HP units for steam generation to 250 psi, and hot water to 30 psi. ASME Code construction. Approved by Underwriters' Laboratories.

Write Now to:

ORR & SEMBOWER, INC.
860 Morgantown Road, Reading, Pa.

BUILDERS OF COST-SAVING BOILERS SINCE 1885

If you write maker identify as IEN-4362

HOW TO SATISFY A CUSTOMER

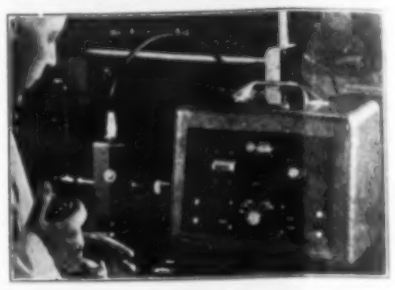
Package your products in Lermer Plastic durable, handsome containers. They are shatterproof, 75% lighter than glass, available clear or opaque in many colors, can be printed or decorated and are available with metal or plastic closures. Write for complete catalog information and samples. If possible, send along products for particular suggestions.

LERMER PLASTICS, INC.
Pioneers and Pacesetters in Plastic Packaging
518 South Ave., Garwood, New Jersey

If you write maker identify as IEN-4363

TESTING . . Electronic scaler for laboratory, reads radioactivity

Source: NUCLEAR INSTRUMENT & CHEMICAL CORP.
229 W. Erie St., Chicago 10, Ill.



Model 180

Rediscaler is a new simplified electronic instrument for use with standard probes and sample counters in radioisotope laboratories. It has input sensitivity to ¼ volt. It is stabilized within 0.05 per cent for line voltage changes of 1 per cent in a range between 95 and 130 volts. Totals are recorded on a built-in counter. A timer can be plugged into the rear of the housing. Overall dimensions are 10 by 9½ by 13¾ inches.

If you write maker identify as IEN-4364

COMPRESSOR . . Mobile assembly based on Chrysler converted engine

Source: O. K. CLUTCH & MACHINERY CO.
1948 Florence St., Columbia, Pa.

Tool boxes on sides

Displacement is 75 cfm. for this new Hornet "75" mobile air compressor. The construction employs a Chrysler six-cylinder gasoline engine with three of the cylinders driving and three compressing the air. Assembly is on a three-wheel trailer. Weight is 1,280 pounds. Sufficient capacity is provided to operate a 45-lb. paving breaker or rock drill, or two backfill tampers, or clay spades, or the equivalent in portable pneumatic tools.

If you write maker identify as IEN-4365

WEIGHING . . Over and under scale for packaging and mixing, to 60 lb.

Source: DETECTO SCALES INC.
538-42 Park Ave., Brooklyn 5, N. Y.

Dashpot stops "float"

Detecto-Gram No. 8800, for bench mounting, and No. 8900, for use on a floor, are recent additions to the company's line of weighing and counting equipment. Overall heights are 34 and 50 inches. Commodity plates measure 11 by 12 by 4 in. and 11 by 12 by 20 inches. Dials are graduated to the first 4 oz. by 1-oz. divisions. The notched beam is graduated in ¼-oz. divisions to one pound.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4366

GRIEVE-HENDRY PORTABLE ELECTRIC OVENS...

Standard Models For Every Special Need!

Model CR-1
10 cu. ft. capacity—30" wide x 25" deep x 24" high. Removable shelves and drip pan. . . . . $79.50 f.o.b. Chicago

Portable. Costs less than 5c per hour to operate. Adjustable temperature control to 225° F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required.

Quick Quotations Prompt Delivery Reasonable Prices on Ovens made to your specifications

Can be used in a group or bank. Use them on the production line —save handling—hauling.

Other standard models with temperature ranges to 1000°F. available. Write for literature.

GRIEVE-HENDRY CO., INC.
1811 W. LAKE ST., DEPT. IEN • CHICAGO 12, ILLINOIS

If you write maker identify as IEN-4367

GET THIS...

Guide to the Choice of B&W Seamless Mechanical Tubing For Your Products

Concise information on characteristics of hot-finished, cold-drawn, and roto-rocked B&W Seamless Mechanical Tubing.

Send for Bulletin TB-340

TA-1743 (M)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN-4368

IT'S SHATTERPROOF!

DOUBLE welded construction, an entirely new development in hacksaw design, gives Starrett SAFE-FLEX blades the perfect combination of hardness and toughness. The cutting edge of hard, high speed steel is reinforced with a medium hard, extra strong center and backed up with a super-tough steel back. See what the new Starrett SAFE-FLEX blade can mean to you in more and straighter cuts per blade. Order a supply today.

Starrett THE L. S. STARRETT COMPANY Athol, Massachusetts, U.S.A. SINCE 1880 WORLD'S GREATEST TOOLMAKERS

If you write maker identify as IEN-4369

See the new Heavy Duty No. 500 *Speed Way* ½" Speed Drill

- All Ball Bearing.
- Wide-face Helical Gears—precision hobbed from nickel alloy steel.
- Integrally Die Cast Aluminum Body and Frame —all structural and supporting members die-cast-in.
- More Powerful Heavy Duty Motor 5½ Amp. input and ½ H.P. output.
- No. 34B Jacobs Geared Chuck and finest Electrical Equipment.
- Compact, Powerful, Light—weighs only 10 lbs.

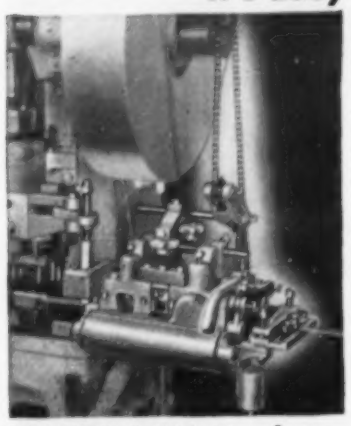
WRITE FOR CATALOG

SPEEDWAY MFG. CO.
1885 So. 52nd Avenue, Cicero 50, Illinois

If you write maker identify as **IEN - 4370**

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

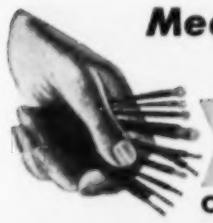
Write for full particulars

WITTEK Manufacturing Co.

4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

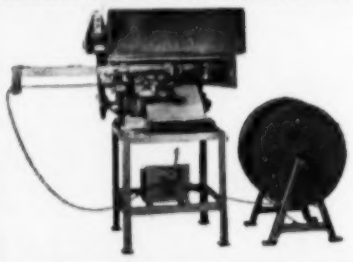
If you write maker identify as **IEN - 4371**



Measure, Cut and Strip Insulated Wire

IN ONE SPEEDY OPERATION

ON ARTOS *Automatic* MACHINES



Does your production require cutting and stripping of insulated electric wire, cord, cable, etc.?

You can produce finished leads *much faster* . . . as many as 3000 per hour in 15-in. lengths . . . on this Artos Automatic Machine. Substantial time savings are obtained over the best manual or semi-automatic methods.

Operation is fully automatic—wire is taken from the reel, measured, cut to length and stripped at one or both ends. Unskilled help can handle the machine. Set-up is easy for different wire types and lengths.

MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR—From 3000 per hour up to 15 in. lengths to 500 per hour in 64-97 in. lengths.
MAXIMUM STRIPPING LENGTH—1½ in. at each end (greater stripped lengths are special).
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH—2 in. (also as short as ⅞ in. under certain conditions).
TYPES OF WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

Other Artos Machines

The complete line of Artos automatic wire cutting and stripping machines will handle *cut lengths* from 1 in. to 60 ft., *stripped lengths* to 6½ in. at one end and 8½ in. at the other, wire from No. 12 to No. 000 gauge, and up to 3600 pieces per hour. Ask for recommendations on your problems.

WRITE FOR BULLETIN

Get the complete story — write for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.

2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as **IEN - 4372**

SAVE TIME AND MATERIALS

Oil-hardened tool steel tapered pin gages accurate to + 0.0001" — 0.0000" insure dependable sizing and location of holes and slots for machinists, set-up men, tool and die men, inspectors, all who need precise hole measurement.

CONCENTRIC TAPER on lower half of each gage fits holes 0.0012" smaller than standard letter, fraction, and number size drill holes. Makes insertion easier. Permits gaging of odd-size holes and slots.

ALL GAGES are 1½ inches long. Sets contain a pair of each size in a plastic case with 4-place decimal equivalents of each size plainly marked.

ALL ITEMS STOCKED FOR IMMEDIATE DELIVERY

THE *Horberg* GAGE COMPANY

Quantity 31 STAPLES ST., BRIDGEPORT, CONN.

..... Letter sets @ $45. 52 gages (A-Z)
..... Fraction Sets @ $50. 60 gages (1/64" to 1/2" in 1/64" steps)
..... Number Sets @ $90. 120 gages (1 to 60)
..... Single gages @ $ 1.
..... Stand alone @ $10.

Please Rush checked items and literature to
company .....
address .....
name .....
title .....

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

Identify as **IEN - 0219**

ALLOYS . . Aluminum bronze alloys, strong, hard, wear resistant, corrosion resistant. 8-page bulletin, "Tuf-Stuf Alloys," gives their properties in detail along with illustrated recommendations on how to machine them. Mueller Brass Co., 1923-27 Lapeer Ave., Port Huron, Mich.

Identify as **IEN - 0220**

SLEEVE BEARINGS . . Large sizes made to meet your requirements up to 14 in. o.d. and 17 in. in length in plain, flanged, half designs. Ask for "King Size Bearings," 4 pages. Johnson Bronze Co., 813-17 S. Mill St., New Castle, Pa.

Identify as **IEN - 0221**

BLOWERS . . Packaged ventilating sets to handle air from 100 to 12,000 cfm. Advantages of V-belt drive, factors in quiet operation, sizes, selection in 28-page Catalog 515. Clarage Fan Co., 621 Porter St., Kalamazoo 16, Mich.

Identify as **IEN - 0222**

BRASS . . Fine grain structure of Formbrite sheet and strip assists in forming and drawing, takes sharp, clean-cut ornamental die impressions which minimize subsequent finishing. Application suggestions in 12-page Bulletin B-39. American Brass Co., 696 S. Main St., Waterbury 20, Conn.

Identify as **IEN - 0223**

BUILDINGS . . Filler strip of asphalt or rubber has corrugations to match those of galvanized steel, aluminum, asbestos-cement, glass fiber-plastic roofing and siding sheets. Where to use and how to install are in 4-page Bulletin 521. Fabricated Products Co., 1952 Water St., West Newton, Pa.

Identify as **IEN - 0224**

BURNER TIPS . . Ceramic tips, rings and heads for manufactured and natural gas do not corrode, oxidize, soot or become clogged. Typical designs, stock and special, are shown in 4-page Bulletin 526. American Lava Corp., 253 Cherokee Blvd., Chattanooga 5, Tenn.

Identify as **IEN - 0225**

BLAST CLEANING . . Wet abrasive removes scale, burs, flash from metal parts ranging from hypodermic needles to jet-engine compressor blades. You can see before-and-after appearance of these parts in 6-page "Pressure Blast" bulletin. Cro-Plate Co., 800 Windsor St., Hartford 5, Conn.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4373**

WRITE YOUR OWN TICKET FOR

Quality Wire!

SPECIFY SENECA FOR WIDE RANGE OF USES

- ☐ Aircraft
- ☐ Armature
- ☐ Cable
- ☐ Car Seal
- ☐ Cotter Pin
- ☐ Curtain Spring
- ☐ Flexible Shaft
- ☐ Glass Netting
- ☐ Hair Pin
- ☐ Lock Spring
- ☐ Piston Ring
- ☐ Plow Steel
- ☐ Ring Traveler
- ☐ Rope
- ☐ Spark Coil Core
- ☐ Spring
- ☐ Stapling
- ☐ Stitching
- ☐ Weaving

Whatever your needs in wire . . . specify SENECA for *top quality* and *uniformity!* High or low carbon steel wire . . . aluminum . . . bronze. Sizes No. 40 W & M (.007) and larger . . . round, half round, oval, square, flat, straightened and cut. Finishes—bright, soft annealed, coppered, liquor, tinned, bright galvanized, oil tempered, enameled. Write about your requirements.

SENECA WIRE & MANUFACTURING COMPANY, FOSTORIA, OHIO

Representatives in practically All Principal Cities

If you write maker identify as **IEN - 4374**

Removes

DIRT and GREASE

FASTER . . . MORE COMPLETELY

Brulin Solvent Degreaser

Non-inflammable and non-toxic, Brulin Solvent Degreaser combines maximum safety with fast action. Compounded for use on production lines where speed is essential, Brulin Solvent Degreaser removes oil and grease films. It is especially practical for the cleaning of electrical motors because electrical insulation is not damaged by immersion. Low in toxicity, Brulin Solvent Degreaser is harmless to hands . . . it presents no safety or health problems requiring special clothing or ventilating equipment. It is particularly recommended as a replacement for toxic carbon tetrachloride.

Quick, efficient and highly concentrated, Brulin Solvent Degreaser can save you money on all kinds of production line jobs.

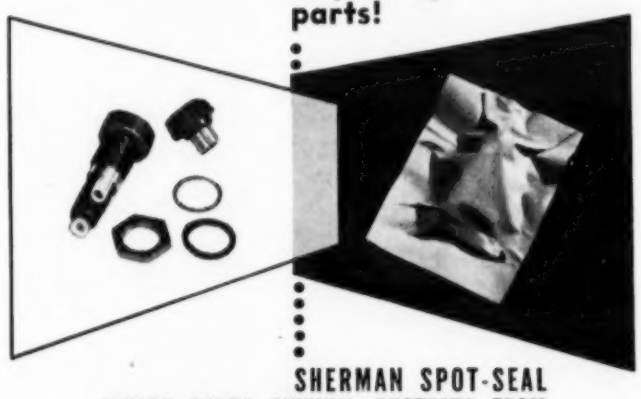
Write today for more complete information.

Brulin & Co., Inc.

2933 COLUMBIA AVENUE • INDIANAPOLIS 7, INDIANA

If you write maker identify as **IEN - 4375**

New Way to package parts!



SHERMAN SPOT-SEAL WRAPS PARTS QUICKLY, PROTECTS FROM DUST AND SCRATCHES. Spot-Seal is a coated wrap that sticks only to itself. Wrap it over the parts, press it together . . . the parts are sealed.

Ideal for wrapping sub-assemblies, replacement kits, or multiple parts in one package, Spot-Seal makes a tight, dust-proof, water-repellent, tamper-proof wrap. Easy to identify, less chance of loss of parts. Write for free samples today, Dept. P.

Sherman PAPER PRODUCTS CORPORATION

NEWTON UPPER FALLS 64, MASS.

CHICAGO LOS ANGELES NEW YORK

If you write maker identify as **IEN - 4376**

Quality Shop Equipment

PROMPT DELIVERY FROM STOCK

SHURE-BUILT EQUIPMENT...

standard or custom made to your specifications

Shure-built "Scotty" Industrial Work Benches now available in wide range of sizes; many exclusive features; steel, laminated hardwood or Nat-flex* tops. Portable Carts and Cabinets, Foremen's Desks; sturdy construction, attractively priced. Write for catalog and prices on standard stock items, or send us your specifications for prompt quotation on special items.

*Trade Mark

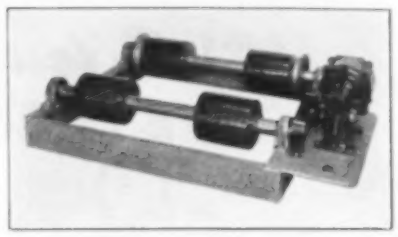
Shure

MANUFACTURING CORPORATION

1601 S. Hanley Rd. St. Louis 17, Mo.

If you write maker identify as IEN - 4377

DRUM ROLLER



Mixes in Suppliers' Drums

AVOIDS:

The fire hazard of open drums
Contamination of one product with another
Cleaning of equipment between mixes
Residual sludge.

ASSURES:

Uniform mix
Easy inspection during operation
Withdrawals in any quantity needed

The VOL-U-METER Company
Buffalo 16, N. Y.

If you write maker identify as IEN - 4378

Take Your Pick of Performance

In the complete Fairbanks-Morse Pump Line you can pick the pump that best suits your ideas of performance, efficiency, capacity, head, initial and operating costs. Whatever your choice, you can be sure it will more than live up to your expectations . . . it's Fairbanks-Morse.

For complete information, call your Fairbanks-Morse pump expert or write Fairbanks, Morse & Co. 600 S. Michigan Ave. Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

PUMPS • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • SCALES • HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY • MAGNETOS

NEW LITERATURE—Continued

Identify as IEN - 0226

TANTALUM CAPACITORS . . Compact design is a feature of units from 1.5 to 30 mf. in 4-page Bulletin 6.100. Fansteel Metallurgical Corp., 2204 Sheridan Rd., North Chicago, Ill.

Identify as IEN - 0227

VACUUM CLEANING . . Nothing but a nozzle and hose to move about when your plant is equipped with the Exidust central vacuum cleaning equipment. Advantages, how the installation operates, selection for industrial and commercial buildings, tools, all in 20-page Bulletin D-5. Lamson Corp., 303-5 Lamson St., Syracuse 1, N. Y.

Identify as IEN - 0228

OVERRUNNING CLUTCH . . Formsprag clutch formerly made by Morse Chain Co. now is being handled by a separate company. Operating principle of tilting metal blocks that rock to grip in one direction and release in the other is described in 6-page Engineering Folder along with sizes and types. Formsprag Co., 23603 Hoover Road, Van Dyke, Mich.

Identify as IEN - 0229

SHAFT COLLARS . . Each has a set screw with counter-clockwise knurls on its cup point to resist vibration. List prices on 42 sizes from 3/16 to 3 in. in 4-page Folder 868. Standard Pressed Steel Co., Box 732, Jenkintown, Pa.

Identify as IEN - 0230

COMMUNICATING . . How a railroad uses the P-A-X automatic business telephone to control its operations is told in 12-page Report No. 105. Automatic Electric Sales Corp., 1031-35 W. Van Buren St., Chicago 7, Ill.

Identify as IEN - 0231

ELECTRIC CONNECTORS . . Soldering of each contact can be done accessibly away from the insulator for the company's miniature VT connectors. Cable, rack, thermocouple units, printed circuit hardware in 16-sheet catalog. Viking Electric, 1059-63 Ingraham St., Dept. H, Los Angeles 17, Calif.

Identify as IEN - 0232

TEMPERATURE CONTROL . . Pneumatic instrument controls temperature and pressure in a variety of process operations. It has a 12-in. circular recording chart. Bulletin 465, 16 pages, stresses recent improvements and shows by diagrams how to apply it. Foxboro Co., 42 Neponset Ave., Foxboro, Mass.

Identify as IEN - 0233

TEMPERATURE CONTROL . . Resistance-thermometer element and a transmitter to change input to a proportional voltage for remote control and recording. Range is to 600 deg. F. Schematic diagrams in 4-page Autronic Bulletin A-706. Swartwout Co., 18521 Euclid Ave., Cleveland 12, Ohio

Identify as IEN - 0234

ROLLER CONVEYORS . . Products ranging from artillery shells to washing machines are handled on roller and other conveyors in 16-page Bulletin 68. Standard Conveyor Co., 64 Indiana Ave., North St. Paul 9, Minn.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4380

EXPERIENCE SINCE 1894

Built into American Beauty ELECTRIC SOLDERING IRONS

FOR MORE YEARS OF EFFICIENCY

Since 1894 these electric soldering irons have demonstrated their efficiency and durability . . . Manufacturing plants, service, maintenance and repair shops choose them for their durability and efficiency.

TEMPERATURE REGULATING STAND

A thermostatically controlled device for maintaining an electric soldering iron at any desired heat while at rest. Adjustable from low or warm to full working temperature.

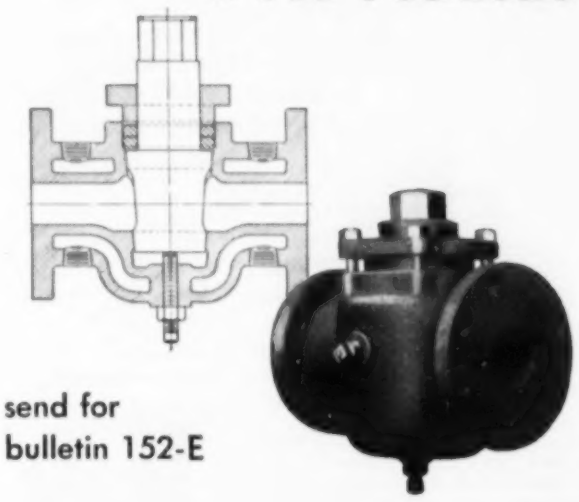
NO. 117-8

Write for Literature

AMERICAN ELECTRICAL HEATER COMPANY
DETROIT 2, MICHIGAN

If you write maker identify as IEN - 4381

Now—
JACKETED FITTINGS in *Ni-Resist*



send for bulletin 152-E

Parks-Cramer Company
FITCHBURG, MASSACHUSETTS

If you write maker identify as IEN - 4382

THE NEW M·S·A HCN DETECTOR

gives immediate warning of hazardous hydrocyanic acid gas concentrations —safeguards workers!

Protecting workers against toxic concentrations of HCN is as easy as "one-two-three" with this accurate device. In any suspected area, you simply squeeze the aspirator bulb one-two-three times and an air sample is drawn into the detector tube. If any HCN is present, the granules turn blue, beginning at the inlet end and traveling down the tube. Easy-to-read scale shows concentration. Test is complete in two minutes.

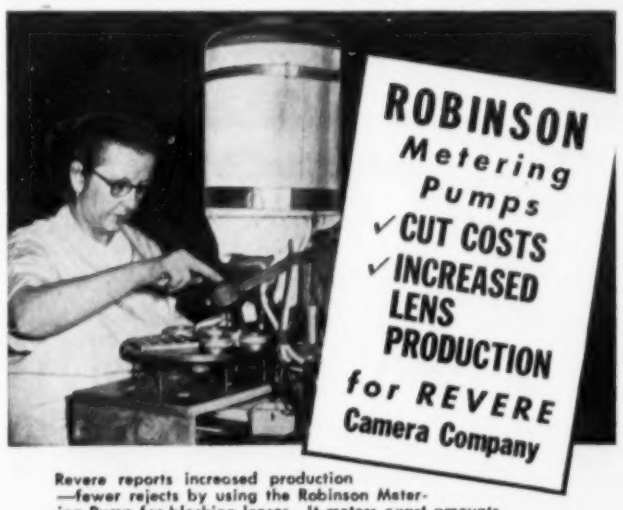
Complete details on HCN safe limits, and instrument operation are in our bulletin. Write for a copy.

MSA SAFETY EQUIPMENT HEADQUARTERS

When you have a safety problem, M.S.A. is at your service . . . Our job is to help you.

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Sts.
Pittsburgh 8, Pa.
76 Branch Offices in the United States

If you write maker identify as IEN - 4383



Revere reports increased production —fewer rejects by using the Robinson Metering Pump for blocking lenses. It meters exact amounts of pitch faster and more accurately than their old method of application.

This versatile production tool may be the economical solution to one of your problems. Write us for specific information.

- Forcibly ejects fluid compounds—not a gravity dispenser
- Controls heat thermostatically
- Ejects fast . . . accurately
- Change discharge without tools rapidly
- Reduces unit costs . . . no skilled operator needed
- Adaptable to any production technique

EDWARD E. ROBINSON
INCORPORATED
P.O. Box 47
95 PARK AVE. • NUTLEY 10, NEW JERSEY
Telephone NUtley 2-4510

If you write maker identify as IEN - 4384

DAY DUST CONTROL
SINCE 1881
A SINGLE UNIT OR A COMPLETE SYSTEM

INDUSTRIAL PLANTS FIND DAY HIGH PRESSURE
REVERSE AIR JET CLEANING ACTION

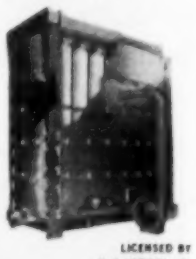
DAY's reverse air jet mechanism provides uniform cleaning.

MORE ECONOMICAL! MORE EFFICIENT!

Reverse Air Jet Ring Travels Continuously Up and Down the Entire Filter Tube. High Pressure Reverse Air Blown Through the Filter Felt Keeps Filter Tubes Clean Constantly.

99.99+% Filtering Efficiency Provides Important Savings in Reclaiming Valuable Products

DAY's improved cleaning action permits the use of better filtering fabric which gives filtering efficiencies up to 99.99+%. One DAY "AC" Dust Filter can handle four different product streams simultaneously, without mixing. Bulletin 528 gives facts, figures and comparison charts. Be sure to see it. Write



The DAY Company
813-3rd Avenue N.E. • Minneapolis 13, Minnesota
IN CANADA: P. O. Box 707, Ft. William, Ont.
Branch Plants in Buffalo, Ft. Worth and Welland, Ontario

LICENSED BY H. J. HERSEY, JR.

If you write maker identify as IEN - 4385

hand stoning with

HARD ARKANSAS* FILE

boosts tool life, jumps output 318%

● One tool room manager reports that by stoning a milling cutter after regular grinding he not only increased the life of the tool but was able to jump output on a magnesium casting from 67 to 280 parts. Master machinists and tool makers know that properly sharpened tools cut faster, longer, and more economically. They also know that there is no better way to sharpen a tool than final hand stoning with an INDIA® Oilstone or HARD ARKANSAS File. There's a size and shape for any job. Just ask your distributor for them.

GET THIS HELPFUL BOOK on the advantages of hand-stoning cutting tools. Address Behr-Manning Corp., Troy, N.Y., Dept. IEN-4.

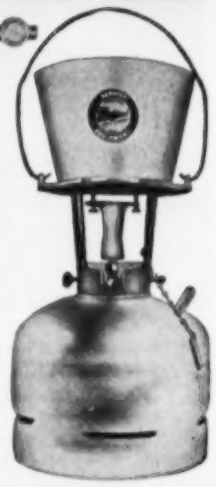
®*Trade-marks

BEHR-MANNING division of NORTON Company
▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN - 4386

For FASTER HEATING & MELTING Use Mutual PROPANE* FURNACES & TORCHES

#5 TORCH Develops 2400° F.



PLUMBERS & HEATING MEN—DON'T MISS THIS: Mutual's field proven Propane Furnace melts 60 pounds of lead in 12 minutes. Mutual Propane Furnaces and Torches are hotter, faster, safer. You get the job done better and quicker with fewer man hours. No pumping, priming or waiting. Won't blow out. No smoke. Light weight. Ideal for heavy duty preheating and close melting. Blow torch and soldering iron can be attached to Propane tank hose.
Mutual High Speed Torches available in broad flame or pointed flame. Reduce excessive labor costs. Use Mutual Torches and Furnaces for the most efficient, cleanest, portable fuel known.
Send for free Mutual catalog and price list.

#2 FURNACE

#4 TORCH—Broad Flame

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*Liquid Petroleum Gas

ORDER NOW
Qualified Jobbers Wanted

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3600 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

NEW LITERATURE—Continued

Identify as IEN - 0235

SCREW CONVEYORS . . 92 pages of engineering information on screw conveyors and their uses, design of components, selection tables and hp. formulae, dimensions, installations. Ask for Book 2289 when you write or check the number above. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill.

Identify as IEN - 0236

CORROSION PROOFING . . Polyvinyl chloride resins in liquid form to use as electrical insulation, tank lining, spring coatings, toy components, flexible molds. Descriptions in 4-page "Hysol 3000 Series Plastisols." Houghton Laboratories Inc., 320-24 Bush St., Olean, N. Y.

Identify as IEN - 0237

SHAFT COUPLING . . Gear-type flexible unit is stocked in sizes for ⅜ to 6⅝-in. bores. Load capacity is 4 to 600 hp. at 100 rpm. Catalog C-4, 16 pages, covers standard and special types, assembly instructions. Sier-Bath Gear & Pump Co., 9250 Hudson Blvd., North Bergen, N. J.

Identify as IEN - 0238

DRIVE BELT . . Teeth inside the Gilmer timing belt engage corresponding teeth on the pulleys for a non-slip grip at speeds to 16,000 fpm. Sizes range from 1/100 hp. to 300 hp. or more. Standard units in 72-page Manual NY-2223. New York Belting & Packing Co., 3 Market St., Passaic, N. J.

Identify as IEN - 0239

RADIANT DRYING . . Electric heating panel to use alone or in multiple oven assemblies to dry, heat, cure. Folder L-1093, 4 pages, gives specifications for purchasing agencies. Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa.

Identify as IEN - 0240

BUCKET ELEVATORS . . Materials from acid phosphate to wheat are listed in a selection table for standard bucket elevators in 76-page Catalog 850 with specifications. Jeffrey Mfg. Co., 914 N. 4th St., Columbus 16, Ohio

Identify as IEN - 0241

ELEVATOR . . Extension boom on a battery-operated truck lifts you 20 ft. in 20 seconds to clean or maintain light fixtures and do other overhead work. Pushbuttons on the platform control movement. "Lift-A-Loft," 4 pages. Barrett-Cravens Co., 4609 S. Western Blvd., Chicago 9, Ill.

Identify as IEN - 0242

ELEVATOR . . Adjustable ramp bridges the gap between a loading dock and the floor of a highway truck. Hydraulic pump adjusts level to that of the truck. Information on 5,000 to 20,000-lb. models in 4-page bulletin. Hohl Machine & Conveyor Co., 2667-P Main St., Buffalo 14, N. Y.

Identify as IEN - 0243

ELEVATORS . . Electric and hand-operated dumbwaiters for a variety of floor-to-floor handling. Bulletin, "Dumbwaiters," 8 pages, presents models and hatchway details. D. A. Matot Inc., 1531-35 W. Altgeld St., Chicago 14, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4387

REMOVE STUBBORN GREASE AND DIRT FROM METAL PARTS — EASIER, FASTER, MORE ECONOMICALLY WITH . . .

Photo shows 20 mm. guns after degreasing of Cosmoline, prior to modification operations.

ENGINEERED SERVICE PHILLIPS
VAPOR DEGREASERS

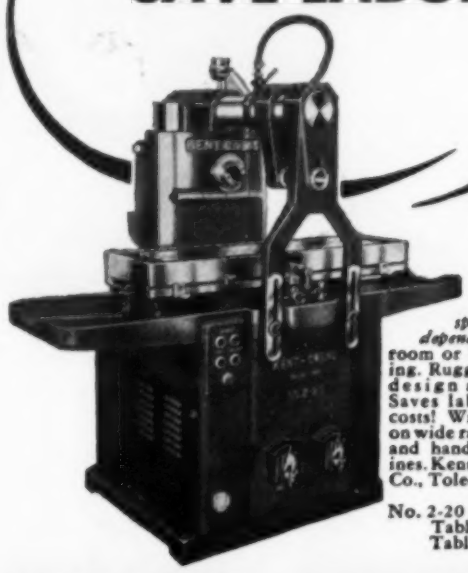
THE most heavily greased up parts will come clean easier and faster in a Phillips degreaser. High vapor temperature (250.2° F.) not only causes more dissolved grease to run off the metal, but makes for faster degreasing too. Wherever you have parts to clean, large or small, before plating, painting, rustproofing, service and repairwork, etc., you can do it better, faster and more economically with a Phillips degreaser. There's a standard model to meet your needs. Check with Phillips today.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Vapor Degreasers • Solvents • Parts Washers

If you write maker identify as IEN - 4388

MILL IT faster.. SAVE LABOR!



Kent-Owens advanced features mean *speed, accuracy* and *dependability*... in tool room or production milling. Rugged . . . simple in design and operation. Saves labor . . . reduces costs! Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machine Co., Toledo, Ohio.

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

KENT-OWENS
Milling Machines

If you write maker identify as IEN - 4389

MODEL 50 Versatile
Low Cost ELECTRONIC
THER-MONIC
INDUCTION HEATING UNIT

BRAZING
SOLDERING
HARDENING
ANNEALING
MELTING

FOR THE PRODUCTION LINE, TOOL ROOM or LABORATORY!

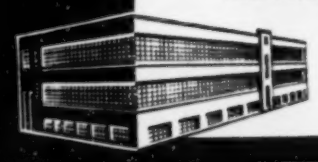
THER-MONIC, pioneer in the field of Induction Heating, offers the only completely contained, electronic generator for continuous production runs with either automatic or hand-feeds, or on small production runs which involve frequent work change-overs. Hundreds already in use; all are acclaimed by owners and operators.

Delivers ready for use—operates on 110V., 60 cycles. Rated in accordance with NEMA standards. Built & certified in accordance with F.C.C. regulations. Unit is similar to our larger sized, high production models. Furnished complete with timer and output transformer. Designed for safe, low voltage work coils.

THER-MONIC INDUCTION HEATING CORP. NEW YORK

$985. F.O.B. Factory

Fully guaranteed. Service and sales in principal cities. Write for literature.



Generators available up to 75 KW output.

INDUCTION HEATING CORPORATION
181 WYTHE AVENUE • BROOKLYN 11, N. Y.
Largest Producers of Electronic Heat Treating Equipment

If you write maker identify as IEN-4391

NEW

For Driving Threaded Inserts

TITAN BUSHING DRIVER

Unique design features of this new production tool provide automatic positioning of threaded inserts to the proper depth below the face of the casting. A ball bearing pressure plate prevents backing the insert out after driving. Standard Titan Bushing Drivers are equipped with ½" female square drive, to drive threaded inserts .010" below face of the casting. Manufactured in sizes for all threaded inserts commonly in use.

Write For Details

TITAN TOOL CO.
Production Tools
52 Main St., Fairview (Erie Co.), Pa.

If you write maker identify as IEN-4392

get a few... or MILLIONS!

Grammes METAL NAME PLATES are right in price in any quantity

● Grammes metal craftsmen will match the quality of your product with name plates that stand out. They offer you experienced design help, too—making sure your plates have the *readability* you want. Grammes name plates are known for eye appealing finishes that *last!*

SUBMIT ROUGH SKETCH or blueprint for prompt recommendations and prices. Meantime write for new booklet, "Tips on Name Plate Selection and Design".

NAME PLATES DIALS — **L.F. GRAMMES & SONS** INCORPORATED ALLENTOWN, PA. — TRIMS • BEZELS PANELS

SPECIALISTS IN DECORATIVE METAL

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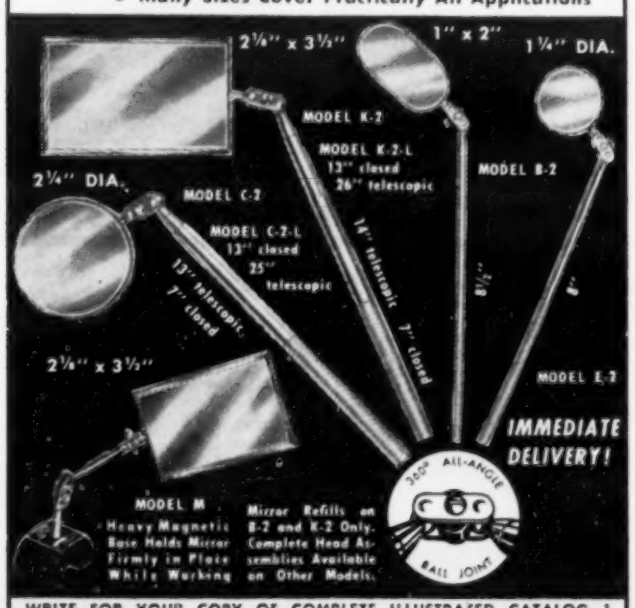
WORK INSPECTION MIRRORS

speed production • prevent accidents

- Exclusive All-Angle Ball Joints
- Precision Engineered
- Replaceable Copper-Backed Clear View Mirrors
- Folds and Fits into Pocket
- Many Sizes Cover Practically All Applications



WRITE FOR YOUR COPY OF COMPLETE ILLUSTRATED CATALOG 1

ULLMAN PRODUCTS CORPORATION
156 PROSPECT AVE., BROOKLYN 15, N. Y.

If you write maker identify as IEN-4394

CLEANING . . Degreasing machine cuts oil and grease from metal parts

Source: J. D. WALLACE & CO.
146 S. California Ave., Dept. IEN, Chicago 12, Ill.

Also cleans glass

Galvanized tank, measuring 28 in. in diameter by 42 in. in height, forms the housing of this new electrically heated Type GD-1 portable degreasing machine. Equipment includes a mercury type control and a manual two-pole switch. The machine takes 2½ gal. of non-inflammable moisture dispelling chlorinated solvent.

Work pieces held in a basket are dipped into the vapor that forms above the liquid solvent. Oil and grease are removed by the vapor action. The machine will take a work basket to 21 in. in diameter by 24 in. in height. It is available for operation on 110 or 220-volt input at an approximate price of $243 to $258.

If you write maker identify as IEN-4395

THREADING . . Ground taps for Class 3B and 2B unified threads

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.

Pamphlet on request

The company announces availability of a new line of high-speed steel ground thread taps. They are made to the new commercial ground thread high limit specifications in styles and sizes covered by List No. 103, 104 and 106. They are available from stock at standard prices. Pitch diameters are larger than the regular commercial ground series.

If you write maker identify as IEN-4396

GRINDING . . Diamond dresser oxide coated to resist corrosion

Source: DIAMONDS AND TOOLS INC.
19343-47 John R St., Detroit 3, Mich.

26 standard types

Diamonds are mounted in the company's new line of holders in a special Colmonoy alloy. It combines low melting temperature with excellent thermal conductivity and wear resistance. Its coefficient of expansion approximates that of the diamond. Each holder assembly is surfaced with an oxide coating to resist corrosion while the holder is kept in stock or is in service exposed to the action of corrosive coolants.

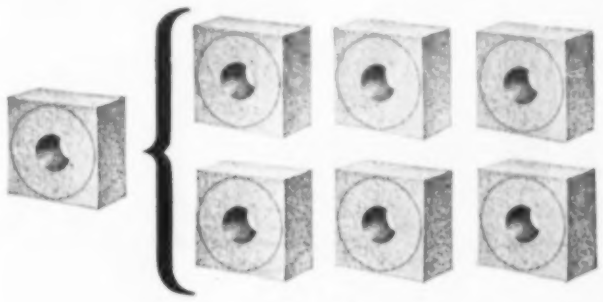
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4397

If you write maker identify as IEN-4398

B&W KAOCAST

Last 3 to 6 times longer

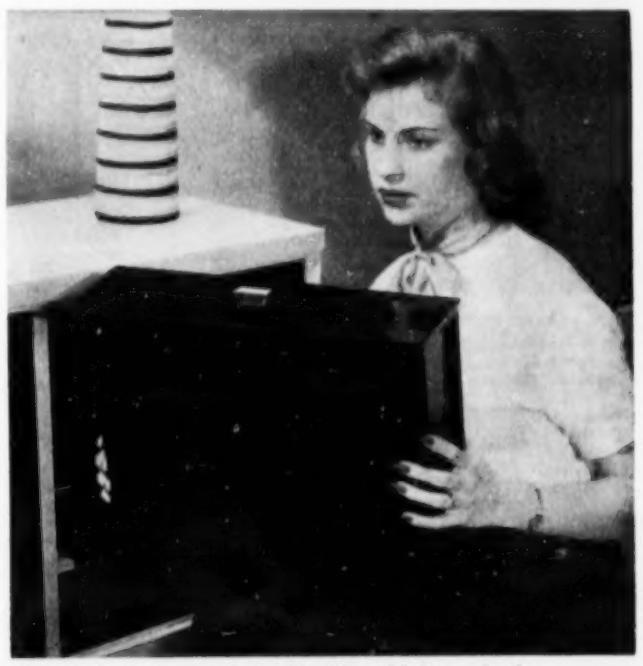


Used for burner blocks, B&W Kaocast stayed on the job 3 to 6 times as long as previous refractory...and this 3000F refractory castable is still going strong.

Kaocast is versatile, too...eliminates need for inventory of special shapes. It can be molded quickly by you, when you need it, directly in place or applied by cement gun. Put B&W Kaocast to work in your plant. Get all the facts from your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y
WORKS: AUGUSTA, GA.

If you write maker identify as IEN-4399



Keynoter Series furniture designed by Edmond J. Spence for the Warren Furniture Manufacturing Co., Paterson, N. J.

ONE-PIECE MOLDED PLASTIC DRAWER KEYNOTES NEWEST FURNITURE DESIGN

Designers of contemporary furniture are looking to contemporary materials to express their ideas. Latest proof of their success is this one-piece drawer molded of BAKELITE Phenolic Plastics.

It has several advantages over conventional drawers—in design, manufacture, and use. With its rounded corners and absence of seams, it's easier to clean. Precisely molded, smooth, light in weight, it fits perfectly in place, slides open quietly and effortlessly. It withstands moisture and heat—won't swell, crack, or warp in normal use. Fast mass-production keeps its cost low.

The drawer illustrated is a rich ebony black that harmonizes with the modern woods—ash-blond korina, limed oak, dark mahogany. It could also be molded in other colors, such as red, brown, and simulated wood effects. The soft satin finish is acquired in the molding operation. The drawer can also be faced with wood or other materials.

BAKELITE Phenolic Plastics have properties that inspire fresh, new designs. They are readily applied to the production of large-size moldings, of which cabinets for air conditioning units and television sets are typical. You, too, can profit through the use of these materials. BAKELITE engineers can help you. Write Dept. PH-14.

BAKELITE
TRADE MARK
PHENOLIC PLASTICS

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd St., New York 17, N. Y.

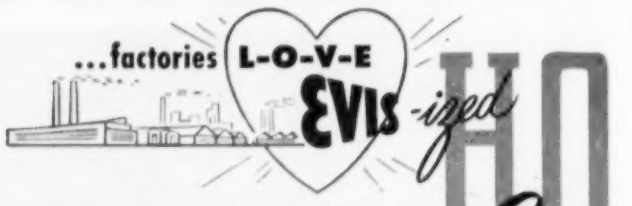
If you write maker identify as IEN - 4401

Main line air pressure is usually more than you need for air equipment operation. Reduce pressure to meet your needs, but keep it constant with a **Schrader Air Pressure Regulator.** You'll find uniform air pressure reduces waste of high-pressure air, and leads to uniform equipment operation . . . longer compressor life.

In the Schrader catalog is a full description of Schrader Air Pressure Regulators, and all Schrader air line equipment. Send for your copy today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Avenue • Dept. D-46 • Brooklyn 38, N. Y.

If you write maker identify as IEN - 4402



. . . because it puts an end to scale deposits in Piping Systems, Boilers (to 175# wp), Condensers, Heat Exchangers and other plant equipment without the use of costly additives.

This phenomenal new water treatment method applies a continuing catalytic effect which changes the physical behavior of raw water in several valuable ways. *EVIS IS NOT A SOFTENER*

Pats. Applied For

FLOW LINE TYPE UNITS HELP ELIMINATE SCALE FROM DEEP WELL PUMPS *(Screwed Only) 2", 2½", 3" & 4" or larger on order.*

SOLD BY . . . *Plumbing Supply, Air Conditioning-Refrigeration and Industrial Jobbers*

Sold on 90-DAY MONEY BACK GUARANTEE

SIZES (iron or bronze)
SCREWED • ½" thru 2"
FLANGED • 2" thru 12"

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RENO WATER CONDITIONED SALES CORP. Western Amer. Life Bldg., 2-5699
SEATTLE EVIS-NORTHWEST CORP. 2417 E. Marginal Way, EL-6116
CHICAGO EVIS-GREAT LAKES COMPANY 201 N. Wabash Ave., ST 2-5908
OMAHA EVIS-MIDWEST, INC. 1504 Dodge St., JA-7044
DALLAS EVIS-SOUTHWEST CO. 6817 Chevy Chase, EM-0137
ATLANTA EVIS-SOUTHEAST CO. 715 Spring St., N.W., VE-0261
PHILADELPHIA EVIS-MIDEAST CO. 4 E. Richmond St., NE 4-8703
ALBANY (New York) EVIS-NORTHEAST CO. 57 Ripple Dr., UN 9-7921
EXCLUSIVE MARINE DIST. MORAN-EVIS CO., SAN FRANCISCO 420 Market St., DO 2-4565

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If you write maker identify as IEN - 4403

REED ENGINEERING CO. 1009 W. FAIRVIEW CARTHAGE, MO.

NEW LITERATURE—Continued

Identify as **IEN - 0244**

ELEVATORS . . Adjustable ramps for loading are shown by 4-page folder in two designs. One bridges the gap between truck and dock adjustably. The other moves the truck up and down to match its level with that of the dock. Rowe Methods Inc., 2532-46 Detroit Ave., Cleveland 13, Ohio

Identify as **IEN - 0245**

FABRICATING . . Formed steel channels and fittings which you can assemble in many different combinations to make racks, bins, benches, cable supports, pipe galleries, machinery mounts. Catalog 153, 44 pages. Flexa Steel Products Inc., 1346-52 W. Washington Blvd., Chicago 7, Ill.

Identify as **IEN - 0246**

CONTRACT FABRICATING . . Stainless steel equipment designed and fabricated for textile, paper, chemical and other process use. Examples from small vessels to large complex units are in 4-page Bulletin 153. Rodney Hunt Machine Co., 48 Mill St., Orange, Mass.

Identify as **IEN - 0247**

FASTENING . . Just pull the trigger to drive a stud into steel, wood, concrete with the company's Model 450 cartridge-power tool. What this tool will do is shown in new 20-page pocket Booklet 955 which suggests the right combination of stud and cartridge for dozens of jobs. Remington Arms Co., 751 Barnum Ave., Bridgeport 2, Conn.

Identify as **IEN - 0248**

OIL FILTERS . . Continuous self-cleaning principle of the Delpark traveling-belt filter has been applied to quenching oil from heat-treating operations. The filter removes breakdown products, soot, scale, contaminants. "Delpark Quenching Oil Filters," 4 pages. Industrial Filtration Co., 253 Industrial Ave., Dept. 505, Lebanon, Ind.

Identify as **IEN - 0249**

FLOOR GRATING . . Made of pierced and formed metal sheet to present a diamond-shaped pattern that is non-skid in all directions. "Grip-Strut" bulletin, 8 pages, contains selection data by load. Grip-Strut Div., Globe Co., 4002 S. Princeton Ave., Chicago 9, Ill.

Identify as **IEN - 0250**

NONSLIP FLOORS . . Abrasive is cast into metal to form nonslip safety treads, thresholds, floor plates, elevator sills. The metal can be cast iron, aluminum, bronze. Standard designs in 12-page "Feralun" bulletin. American Abrasive Metals Co., 458-62 Coit St., Irvington 11, N. J.

Identify as **IEN - 0251**

FLOOR REPAIR . . Material resists water, corrosive liquids and abrasive wear in process plants. It can be used to patch or resurface. "Stonpach," 4 pages. Stonhard Co., 1304-8 Spring Garden St., Philadelphia 23, Pa.

Identify as **IEN - 0252**

HEAT TREATING FURNACES . . Gas-fired batch type units in hearth, pot, vertical muffle designs are reviewed in 4-page Form SC-161 along with atmosphere generators. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4404

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

FREE CATALOG . . . New Coated Abrasive Selector by CARBORUNDUM

This new "Coated Abrasive Selector for the Average Grinding Job" helps you choose the right coated abrasive for any machine or hand abrasive operation—on metals, non-metallics, or wood.

The recommendations given are complete—including grain sizes and types, backings, coatings, product sizes, prices and packaging information. Metalworking recommendations include coated abrasives for hand, portable and disc sanding; and for contact wheel, platen, and slack-of-belt machine grinding. Recommendations for roughing, polishing, and finishing glass and other non-metallic materials are also shown. For woodworking, coated abrasives are listed for hand sanding and finishing, and machine sanding with the following types of sanders: oscillating, flat belt, edge, turning, moulding, drum, disc, and others.

A special section lists contact wheels—both solid and universal hub, serrated and plain. The "61" Port-A-Belt grinding attachments are also described fully. In addition, you will find a list of machine manufacturers—giving machine model numbers and belt sizes.

It's free! Get this handy catalog today. Write to Dept. IEN 82-310.

"Carborundum" and "Port-A-Belt" are trademarks of The Carborundum Company, Niagara Falls, New York

82-310

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as IEN - 4405

Select pressure—
get uniform, constant
hydraulic control with

TRADE MARK "FULFLO" REG. U.S. PAT. OFF.

OIL BY-PASS RELIEF VALVES

JUST INSTALL . . .
that's all it takes to
MAINTAIN PRESSURE
from 0 to 500 lbs.

For ram presses, machine tool hydraulic mechanism, Diesels and oil-burning equipment.

BRASS OR CAST IRON •
FEWEST PARTS • SIMPLEST DESIGN •
TROUBLE-FREE • NON-CHATTERING

Standard or Flange Types

WRITE TODAY
On your letterhead, please, for
FULFLO MECHANICAL DATA BOOK

Pipe sizes: ¼" to 2"

FULFLO THE FULFLO SPECIALTIES CO. Inc.
BLANCHESTER, OHIO

If you write maker identify as IEN - 4406

Request Roth's Counsel—NOW!
Get Roth technical assistance without obligation. We'll be glad to help you solve your rubber problem. Write or mail coupon today.

A simple problem for the rubber technologist, you may say. But it's significant that Tektronix, Inc.—of Portland—had Roth Rubber—in Chicago—provide the solution to this one:
Designed for television broadcasters and research laboratories, the Tektronix 524-D Oscilloscope depends, for its viewing efficiency, on a simple, inexpensive viewing hood supplied by Roth.

What's YOUR rubber problem? Roth Rubber can help you, too!

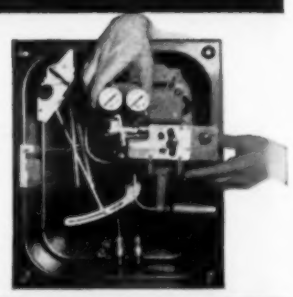
ROTH RUBBER COMPANY
1856 S. 54th Ave. • Chicago 50

• Thirty Years in Business—Custom Manufacturers of Industrial Rubber Products since 1923

If you write maker identify as IEN - 4407

TEMPERATURE & PRESSURE RECORDERS and CONTROLLERS

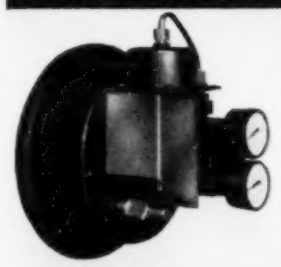
EASY TO CLEAN



PENN air operated controllers and transmitters, piped with flexible tube, are readily removable for inspection or cleaning.

The "Worm" plate, a PENN exclusive, permits easy cleaning of air passages.

PNEUMATIC TRANSMITTER



Compact Pressure Gage Pneumatic Transmitter, takes no more space than 6" gage.

PENN'S Exclusive "WORM" PLATE

More than 40 Years' Experience . . . more than 10,000 Installations

PENN INDUSTRIAL INSTRUMENT CORP.
PENN Bldg., 4110 HAVERFORD AVE.
PHILADELPHIA 4, PENNA.

If you write maker identify as IEN-4408

HOW INDUSTRY IS SAVING MONEY

A PROBLEM—Perhaps it's a bottleneck on the assembly line, broken shipments at the delivery point, stock confusion in the supply department, or any one of a number of problems which can be solved by a dependable industrial tape.

SOLUTION, PART I

An F. O. S. Industrial Tape Analyst who can investigate a problem and suggest a solution. F.O.S. Analysts are trained technical salesmen. They know tapes and the applications which every day are doing new jobs quicker, old jobs better.

SOLUTION, PART II

F.O.S. laboratory experts who know industry's problems and have had practical experience in solving them. That's industry's assurance that if there is a better way with industrial tape, there will be an F.O.S. Tape for the job.

You Too Can Benefit—Ask to have an F.O.S. Tape Analyst call on you. He'll show you how to save time and money with F.O.S. Industrial Tape. Prices, catalogues, samples, also on request. Call on "the originators of pressure-sensitive industrial tape" . . . Write factory (below), today.

F.O.S. INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

If you write maker identify as IEN-4409

FOR MATERIAL HANDLING—

more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME · MONEY · LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

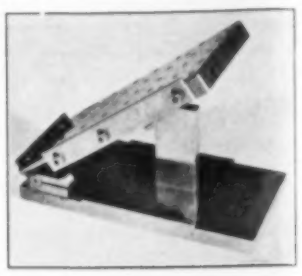
SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN-4411

LAYOUT . . Tool steel sine plate, 4 by 7¾ in., for precision work

Source: TOOL SPECIALTIES CO.
388-92 Hillside Ave., Hillside, N. J.



Adjustable shoulders

Threaded holes for work holding are spaced on ¾ by 1-in. centers in the hardened and ground tool steel top of this new sine plate. It stands 1½ in. in height in horizontal position. It can be adjusted to any angle to 90 deg. with horizontal. The position can be locked.

The base plate is fitted with an 0.100-in. recess to provide for setting any sine above zero by means of gage blocks according to a table of constants that is supplied with the unit. Weight is 10 pounds.

If you write maker identify as IEN-4412

TRUCK . . Two wheel hand unit for barrels, cases, has tubular frame

Source: PALMER-SHILE CO.
16009 Fullerton Ave., Detroit 27, Mich.

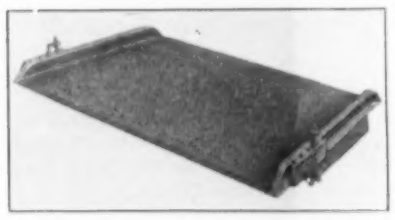
Weighs about 50 pounds

The nose plate on this new hand truck measures 19 in. in width at the base and tapers to 13 in. at the front. It is secured to a tubular steel frame mounted on two 6-in. wheels. The frame is shaped to carry a barrel or a rectangular case. Guards in front of the wheels keep them from contacting loads such as bags.

If you write maker identify as IEN-4413

FLOORS . . Magnesium dockboard bridges between platform and car

Source: PENCO ENGINEERING CO.
23-27 California St., San Francisco 11, Calif.



Ready for use

New flared ramp measures 60 in. in width at the car door and 84 in. at the shipping platform end. It is available in 52 standard models with four capacities ranging from 3,000 to 10,000 pounds. It can be lifted and carried by one man. Its trucking surface carries a diamond pattern to prevent skidding, is crowned for varying level between a shipping platform and a railroad car floor. The assembly includes the company's positive lock to hold it in operating position and prevent movement.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4414

Indicates RPM, operations, cycles, angular or linear motion. Actuates electrical counters. Serves as tachometer when used with voltmeter. Used for precision ignition timing. Controls electrical devices when used with amplifiers and relays. Trips Thyratron circuits for flashing light with rotating machinery. Provides synchronizing voltage for oscillograph; markers for angular or linear position in measuring displacement. Used in ballistic research. Many other applications.

Generates Voltages

PROPORTIONAL TO OBJECT'S RATE of SPEED

WITHOUT CONTACT or "LOADING"

MODEL 3010-A

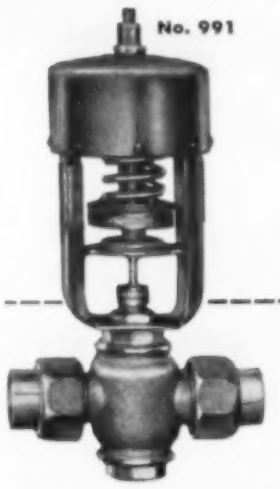
New Electro
IMPULSE GENERATOR

Indicates rate of motion at all speeds. Small, low cost electromagnetic pick-up generates electrical impulses. Self-energized by built-in Alnico V magnet, it produces usable voltage at speeds in excess of 3"/sec. Actuated by the displacement or vibration of any magnetic material in the field of the pick-up. Such as a slot or keyway in the rim of a wheel or shaft, the teeth in a gear, or any magnetic part on a moving body. Low price permits use in production machinery.

Write for FREE Bulletin MP 592!

ELECTRO PRODUCTS LABORATORIES
4501 IE-U Ravenswood Avenue
Chicago 40, Illinois

If you write maker identify as IEN-4415



No. 991

Regulates pressure automatically

FOR STEAM, AIR, GAS, WATER OR OIL

● Ideal for reducing from high to low pressure, or to insure a constant pressure when fluctuating supply pressure encountered. May also be used as a "bellows motor" control valve in pneumatic or hydraulic control systems. Provides steady pressure, no drift or build-up. All-metal, plus stainless steel frame for extra strength and corrosion-resistance. Compact, rugged, dependable. Write for Catalog GN-D.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

If you write maker identify as IEN-4416

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

363R

DRYING and CONCENTRATING CO.
322 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN-4417

IN MONEL METAL...

. . . or in steel, stainless steel, nickel, aluminum, magnesium, copper or many alloys . . . Hackney Deep Drawn Shapes, Shells and Pressure Reservoirs can help you bolster product appeal with advantages like these:

—light weight
—extra strength
—close tolerances
—streamlined appearance

Write for full details.

PRESSED STEEL TANK COMPANY
Manufacturer of Hackney Products
1449 S. 66th St., Milwaukee 14
1322 Vanderbilt Concourse Bldg., New York 17
253 Hanna Bldg., Cleveland 15
936 W. Peachtree St., N. W., Room 135, Atlanta 3
208 S. LaSalle St., Room 786, Chicago 4
577 Roosevelt Bldg., Los Angeles 17
18 W. 43rd St., Room 23, Kansas City 11, Mo.

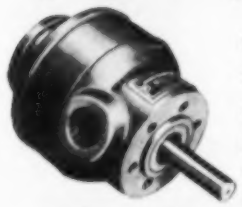
Hackney MILWAUKEE

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN - 4418

GEROTOR*

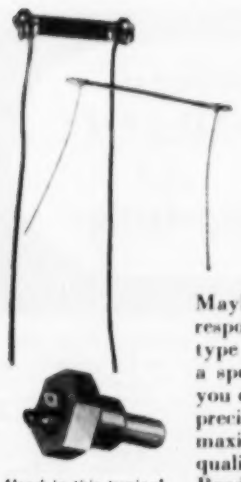
hydraulic pumps * *



* Pronounced Jer-rotor.
* * Pronounced outstanding in design and performance. Heart of each hydraulic pump is the patented Gerotor mechanism, both elements of which revolve in the same direction at low relative speed. This results in longer life, less slippage, less wear, a smoother and more uniform flow. In your plant or in your product—in any hydraulic circuit—a Gerotor pump means higher efficiency at lower operating cost.

GEROTOR MAY CORPORATION, BALTIMORE 3, MD.

If you write maker identify as IEN - 4419



Used in this typical application for sensing temperature of hydraulic oil.

precision-made to your needs . . .
BENDIX-FRIEZ thermistors

Maybe your need for these temperature responsive resistors can be satisfied by a type we carry in stock. Maybe you require a specially-developed type. In either case, you can depend on Bendix-Friez to provide precision-made thermistors to serve you with maximum efficiency. High standards of quality control in manufacture make Bendix-Friez Thermistors pre-eminent in their field—assure you of utmost satisfaction.

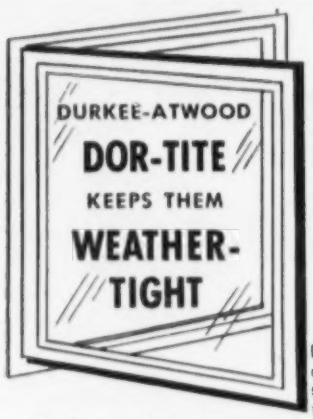
STANDARD TYPES FOR IMMEDIATE DELIVERY

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation
1428 Taylor Avenue, BALTIMORE 4, MARYLAND
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

If you write maker identify as IEN - 4420



DURKEE-ATWOOD DOR-TITE, a soft, resilient sponge rubber stripping insulates the aluminum storm panel from steel casement giving weather-tight protection, and a cushion against shocks.

DOR-TITE comes in exact widths and thicknesses needed... requires no trimming . . . applies readily because of its factory-processed, wet-type adhesive back. *No solvents needed to activate adhesive . . . no metal preparation required other than a clean surface.* SPEEDS WORK, CUTS PRODUCTION COSTS.

The Empire Home Improvement Co., of Denver, makers of storm window panels, has used DURKEE-ATWOOD DOR-TITE for four years. Mr. D. S. Nelson, sales manager says, "We have found it to be extremely helpful in our insulating application." Empire storm windows are designed for steel casements and are mounted directly on the outside of the primary windows.

Investigate the money-saving possibilities of DURKEE-ATWOOD DOR-TITE applications in your business . . . check its amazing versatility. DOR-TITE, because of its *patented built-in fabric base* does not stretch during application . . . does not creep back and pull loose after application as do many other types of sponge stripping.

DURKEE-ATWOOD COMPANY
Dept. IE 4, Minneapolis 13, Minn.

Form No. 544

NEW LITERATURE—Continued

Identify as IEN - 0253

LIQUID LEVEL GAGE . . Liquid shows black in contrast to bright, mirror-like appearance of empty space above in the company's reflex liquid-level gage. You can see it in 4-page Bulletin 184 along with sizes. Jerguson Gage & Valve Co., 78-82 Fellsway, Somerville 45, Mass.

Identify as IEN - 0254

PLUG GAGES . . Reversible go and no-go designs, also reversible thread gages for internal and external work, gage holders, lapping machines. Catalog 53, 24 pages. Size Control Co., 2508 W. Washington Blvd., Chicago 12, Ill.

Identify as IEN - 0255

TOOL POST GRINDERS . . Select the one you need by size and make of machine in new 40 page Catalog 53. You also will find data on grinding quills, hand and flexible-shaft grinders, drill grinders, a high-speed drilling head, fhp. motors, accessories. Dumore Co., 1392 17th St., Racine, Wis.

Identify as IEN - 0256

HARD FACING . . Ten welding rods made by the company are compared with those of 23 other makes for hard-facing applications. "Hardsurfacing Comparison Chart," 4 pages. Rankin Mfg. Co., 3070-74 W. Pico Blvd., Los Angeles 6, Calif.

Identify as IEN - 0257

HEAT TREATING . . Controlled atmospheres are employed for both heat and quench chambers in the company's Series-T forced-convection furnace. Three models handle 400 to 800 lb. of work per hour. Bulletin T-19, 4 pages, gives details. Ipsen Industries Inc., 713-17 S. Main St., Rockford, Ill.

Identify as IEN - 0258

WATER HOSE . . Rubber-fabric construction suits Jupiter hose for 75 per cent of water hose requirements. Sizes, construction, other types are covered by 4-page Bulletin 4800. B. F. Goodrich Co., 448-52 S. Main St., Akron 11, Ohio

Identify as IEN - 0259

PLASTIC INSULATING FOAM . . White fluffy material has thermal conductivity factor of .18 and weighs .8 lb. per cu. ft. "Colfoam" booklet, 8 pages, suggests uses in low-temperature refrigeration, acoustic insulation. Colton Chemical Co., 1543-47 E. 18th St., Cleveland 14, Ohio

Identify as IEN - 0260

LATHES . . Ten-inch model in bench and floor designs is described in 12-page Catalog 5216 on standard specifications, construction, attachments, accessories. South Bend Lathe Works, 301 E. Madison St., South Bend 22, Ind.

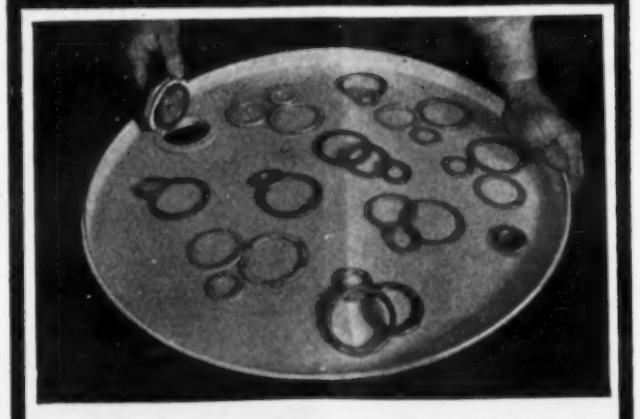
Identify as IEN - 0261

FLUORESCENT LIGHTING . . Fixtures for shop and office use are shown with list prices and suggestions on use in pocket-size Booklet B-5799, 24 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4421

MELRATH GASKETS



DRUM PLUG GASKETS

Made from any desired material or combination of materials. Resilient — tightened with little torque — remain tight under all temperature changes. For gasoline, kerosene, benzol, alcohol, fuel oil, lubricating oil, paraffine, paint, lacquer, dye, chemicals, etc.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN - 4422

WON'T SMUDGE • RESISTS: DIRT GREASE WATER ACIDS

LABELON PLASTIC Write on it TAPE

STICKS WITHOUT MOISTENING

For MAINTENANCE INVENTORY, STORAGE, OFFICE

Write Dept. IEN

Nothing else like LABELON—the amazing "Write on it" plastic tape! Use it to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for supplies, experiments; for panel boards or wiring; for office files, folders, etc.

LABELON TAPE sticks without moistening to any smooth, clean surface—yet can be quickly removed. Resists heat up to 160°. Just write on it with pencil or stylus—message won't smudge. Choice of widths and colors. Handy dispenser with cutter bar.

See your nearest dealer, or write for sample and prices.

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

If you write maker identify as IEN - 4423

NO INSTRUCTIONS NECESSARY WITH THIS EXTINGUISHER!

IT'S A RANDOLPH!

From Bracket to Blaze in split seconds! No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO_2 kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to RANDOLPH LABORATORIES, INC.
6 E. Kinzie St.
Chicago 11, Ill.

If you write maker identify as IEN - 4424

Protective Coatings for Metal
STOP Scaling and Corrosion
A CHEMICAL TREATMENT APPLIED LIKE PAINT

WHAT IT DOES

PROTECTS AGAINST . . .
• Corrosion and Scaling at high temperatures up to 1850°F.
• Acids
• Alkalies
• Oxidation

WHERE IT IS USED

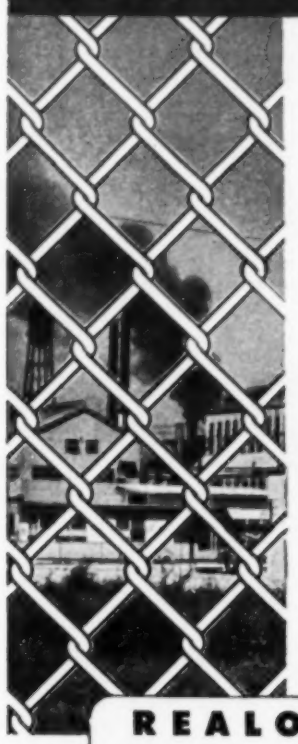
Stacks • High Pressure Boilers • Exhausts • Breeches • Blowers • Stokers and Burners • Mufflers • Pickling and Plating Equipment • Vulcanizing Equipment

FOR FREE TEST SAMPLE — Write outlining your intended use, giving kind of metal, corrosive conditions and approximate minimum and maximum temperatures.

Markal COMPANY
3075 West Carroll Avenue • Chicago 12, Illinois

If you write maker identify as IEN-4425

REALOCK FENCE



GIVES *Positive* PROTECTION

Positive protection for your grounds and property is assured with Realock Fence. In addition, all fittings, hinges and locking devices have bolts on the inside, secure from outside tampering.

Noted for its rugged construction and long-lasting weather resistance, Realock Fence can be depended upon for years of dependable, trouble-free service.

For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION
Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION
Oakland, California
WICKWIRE SPENCER STEEL DIVISION
Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN-4426

PRODUCTION UP COSTS DOWN WITH Commander PRODUCTION TOOLS

Adjustable MULTI-DRILL

- Adjustable To Any Hole Pattern
- Drill 2 to 8 Holes at 1 Stroke
- Fits Any Drill Press

MODEL 900

Increase production up to 800%—save time, cut costs. Mounted without alterations or special tools. 9" drilling area; centers to ½". Extension Spindles available to increase area to 22½". Special adaptations available.

"the tapper that thinks for its operator"

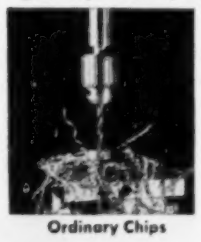
Commander TAPPER

- Wider Range . . . 1 Tapper Handles #0 to ¾" Taps
- Automatic Tap Protection
- Furnished to Fit Any Drill Press

Adjustable full range torque control instantly stops any tap when it's dull, loaded, strikes a hard spot, or bottoms in blind hole tapping. Assures maximum production, cuts rejects, even with inexperienced operators.

DRILL CHIP BREAKER

- Drill SHALLOW or DEEP Holes up to 400% Faster
- Drill 10 diameters or more in depth without clearing drill
- Better, Smoother, More Accurate Holes



Ordinary Chips

Chip Breaker Chips

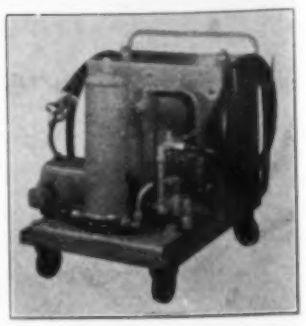
Write FOR CATALOG #851 and the name of your nearby Commander Distributor

Commander MFG. CO.
4219 W. KINZIE STREET
CHICAGO 24, ILLINOIS

If you write maker identify as IEN-4428

FILTERING . . Portable equipment to clean hydraulic oil in a machine

Source: J. N. FAUVER CO.
45 W. Hancock Ave., Detroit 1, Mich.



Oil service unit

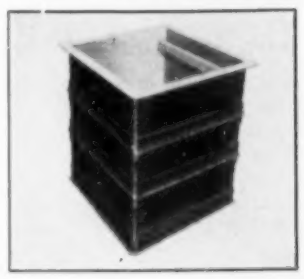
Illustrated is new design of the company's portable oil filtering equipment, previously described IEN-8699-52. It is moved to a machine and its intake and discharge hoses are connected to pump out contaminated hydraulic oil, filter it and return it to the machine sump or to tanks for transport or storage.

The equipment consists of 20 and 55-gal. tanks, a Model-20 ½-hp. motor driven Yale & Towne pump, a Cuno oil filter, the required hose, fittings, valves and a drip-proof nozzle.

If you write maker identify as IEN-4429

HANDLING . . Plastic tank made by fabricating Fiberglas sheets

Source: LAMINEX CORP.
992-96 Jefferson St., Fall River, Mass.



Quotation on request

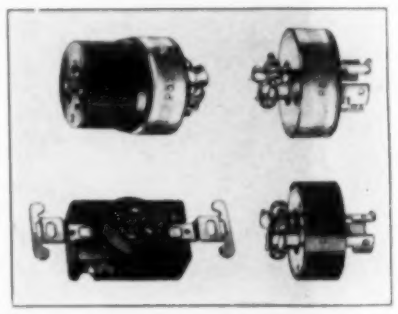
New service has been added to the company's previously developed molded production of Fiberglas containers in which the company is prepared to fabricate, to order, any size of tank to a maximum of 12 by 12 by 4 feet. No molds are required so there is no tool charge.

The finished tank has straight sides and corners. Joints are pressure bonded. Walls are of uniform thickness and are reinforced with horizontal ribs.

If you write maker identify as IEN-4430

CONNECTORS . . Plugs and sockets push and turn to make and lock circuit

Source: PASS & SEYMOUR INC.
552 Solvay Station, Syracuse 9, N. Y.



Ask for Manual 2759

Two, three and four-wire receptacles, caps and connectors rate 10 and 20 amp. on 220-volt ac. and dc. in this new Turnlock line. The receptacles are made with two-piece bodies and plaster ears. They are arranged for side or back wiring. Armored caps and connectors include bindingscrews, wireways, strain relief clamps. Rating is marked prominently.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4431

Eliminate Pipe Corrosion Problems with Easy-to-Install

CLOW (THREADED*) CAST IRON PIPE

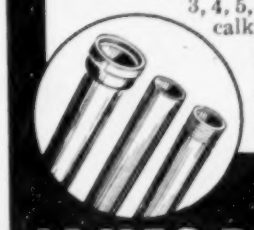
CLOW CAST IRON PIPE CAN BE

on-the-job with ordinary tools of the piping trade

WHETHER YOU ARE BUILDING, EXPANDING or replacing, consider the experience of leading architects and plumbing contractors...CLOW *threaded** CAST IRON PIPE is now their choice for all 3" and larger downspouts, waste and vent lines. They know that its corrosion-resisting qualities and long-life durability assure permanent, trouble-free service.

CLOW *threaded** cast iron pipe can be cut and threaded with ordinary tools of the trade...Available with plain or threaded ends: 18' lengths, sizes 3, 4, 5, 6, 8 and 10"...*also* with integral calking hub (other end plain) in 18' lengths and in sizes 4, 6 and 8".

Write for Form 4-26-50 to: JAMES B. CLOW & SONS, 201-299 North Talman Avenue, Chicago 80, Illinois.



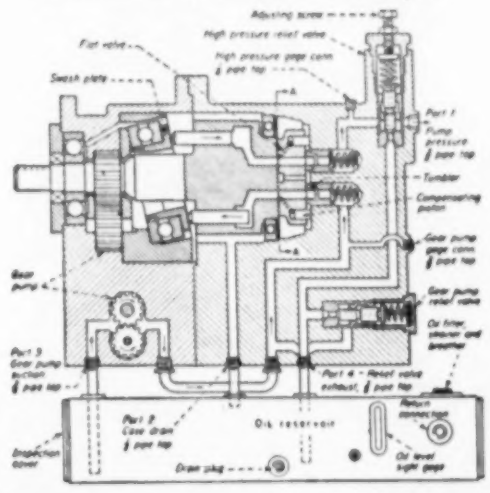
*Has the same outside diameter as steel or G.W.I. pipe

JAMES B. CLOW & SONS
Wholesale Distributors of Pipe, Valves and Fittings for Industrial Use

If you write maker identify as IEN-4432

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN-4433

J-M BLAZECRETE speeds refractory repairs . . .

That's why it pays you to use this hydraulic-setting refractory for temperatures to 3000F

REPAIR old refractory linings—or build new ones—quickly and economically with Blazecrete*. For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, Blazecrete adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast . . . without ramming or tamping.

Three types of hydraulic-setting Blazecrete are available.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN-4434

WATSON-STILLMAN

HYDRAULIC POWER TOOLS FOR INDUSTRY

Bends standard, extra heavy and double extra heavy steel pipe from ⅜ in. to 2 in., as well as standard weight pipe up to 3 in. dia. Also solid mild steel bars up to 2 in. dia.

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

Single and double plunger types, with reservoirs of different capacities for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

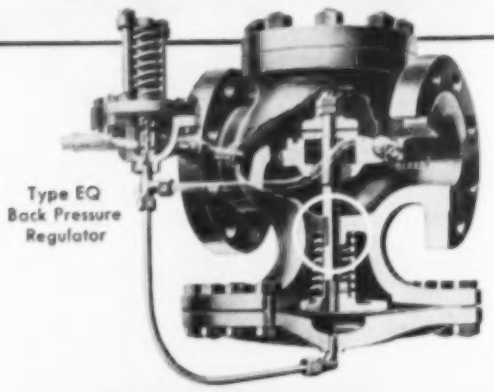
9-0-9

Send for your copy of Bulletin A-5 . . . It's Free.

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
Roselle, New Jersey

If you write maker identify as IEN - 4435

another SPENCE *design feature*



Type EQ Back Pressure Regulator

No Stuffing Boxes..

In Spence regulators all main valves and most pilots are built without stuffing boxes. This packless construction is made possible by the use of a large balanced metal diaphragm which eliminates the need for closely fitted parts. Result? More accurate regulation. • Valve stem wear is also reduced in the Spence packless design. Result? Low maintenance, years of trouble-free service • Write for Bulletin 500 giving full details of complete Spence line of automatic regulating valves.

SE-125

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 4436

JOY WG-9 "Industrial-Air" COMPRESSOR

Saves space—gives you top efficiency—built for heavy duty

★ Full force-feed lubrication of all working parts
★ Replaceable cylinder liners and crosshead guides
★ Small floor area and simple foundation requirements
★ Anti-friction main bearings

15 Sizes—172 to 881 CFM
20 to 150 psi
FREE BULLETIN

For complete details, write for new Bulletin A-43, or...

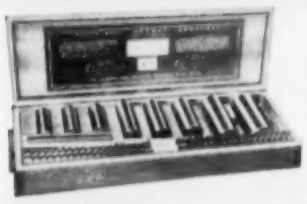
Consult a Joy Engineer

WAD 13088

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 4437

CUT YOUR OWN KEYWAYS



with du Mont *Minute Man*®
Keyway Broaches—any size from 1/16" to 1" in any bore from 1/4" to 3"

CUT THE COST

with *Minute Man* Broaches you can do the job in one minute for as little as a penny a keyway

CUT THIS COUPON

and declare yourself big dividends in time and money saved

The du MONT CORPORATION, Greenfield, Mass.
MAIL ME FREE CATALOG and PRICE LIST on Minute Man Keyway Broaches and Kits N
Name.....
Company.....
Address.....

NEW LITERATURE—Continued

Identify as IEN - 0262

MACHINING . . One automatic transfer machine does the work of four in producing double-ended parts combined with simultaneous cut-off. Four examples in 4-page Bulletin 3000 include production figures. Motch & Merryweather Machinery Co., 715 Penton Bldg., Cleveland 13, Ohio

Identify as IEN - 0263

DESIGN STRENGTHENED METAL . . Properties of strength, mar resistance, attractive appearance are emphasized in 6-page General Product Folder on Rigid-Tex metal. Pictures show 15 standard patterns available in the metal. Rigidized Metals Corp., 664-P Ohio St., Buffalo 3, N. Y.

Identify as IEN - 0264

MICROFILM . . Enlargement service for 16 or 35-mm. microfilm produces paper records to 14 in. in width. Steps are shown in 4-page Folder BSD-3-R1. Remington Rand Inc., 315 Fourth Ave., Room 1618, New York 10, N. Y.

Identify as IEN - 0265

MILLING CUTTERS . . Inserted-blade milling and boring cutters for a variety of equipment. Catalog 60-L, 72 pages, covers standard cutters, selection, methods, grinding. Ingersoll Milling Machine Co., 2405 Douglas St., Rockford, Ill.

Identify as IEN - 0266

ELECTRIC MOTORS . . Shaded-pole induction motors from 1/150 to 1/40 hp., primarily for use in appliances. "Micro-Motor" folder, 4 pages, gives specifications and shows parts. Redmond Co., 49 Redmond St., Owosso, Mich.

Identify as IEN - 0267

ELECTRIC MOTORS . . Enclosed and explosion proof for dangerous, damp and dusty locations. Handsome two-page cut-away view in color illustrates essential construction features in 8-page Bulletin F-1784. U. S. Electrical Motors Inc., Box 2058-A, Terminal Annex, Los Angeles 54, Calif.

Identify as IEN - 0268

MOTOR CONTROL . . Quick overall picture on available motor starters, switches, relays, contactors, limit controls, timers. Please use your letterhead when requesting the 28-page bulletin, "Quality Line of Motor Controls." Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

Identify as IEN - 0269

PACKAGING CONTAINER . . Steel pail has formed cushioning to support fragile parts against breakage. The cushioning can be molded foam rubber, resilient rubber fiber, die-cut Tufflex. "Method 2D," 4 pages. Greenwood Packaging Supply Co., 857-877 Summer Ave., Newark 4, N. J.

Identify as IEN - 0270

MAINTENANCE PAINTS . . Twelve products include exterior aluminum, heat-resisting black and aluminum, acid and alkali resisting paints, aluminum fence paint, roof coating, glass cleaner and a no-glare glass coating. Folder, 6 pages. Skybryte Co., 3123-27 Perkins Ave., Cleveland 14, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4438

NEWCOMER CARBIDE . . .
CONTROLLED QUALITY
Carbides made in our own modern plant

With the "KNOW-HOW" gained from nearly a quarter-century of experience and the newest equipment available.

Every Newcomer representative is a qualified tool engineer with the ability to solve your most difficult problems.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

If you write maker identify as IEN - 4439

New Bostitch Stapling Plier with a Pointed Blade

For fastening almost any cardboard or corrugated container including those half-filled or loosely packed.

- Sharp blade penetrates easily and
- Clinches staples inside carton
- Leaves only small slit
- Seals and strengthens container

BOSTITCH® fastens it better AND FASTER with wire

For a free demonstration call your local Bostitch representative. He's listed under "Bostitch" in your telephone directory. Or write:
Bostitch
644 Mechanic St.
Westerly, R. I.

If you write maker identify as IEN - 4440

MET-L-WOOD METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood... *opening new horizons to structural designers*"

If you write maker identify as IEN - 4441

ALWAYS set up to Measure
RESISTANCE ☆ CAPACITANCE ☆ INDUCTANCE

This universal Bridge is completely self-contained with built-in standards and power sources. Portable, accurate, direct-reading, reliable and always ready to use, it measures these quantities rapidly and easily:

Resistance: *1 milliohm to 1 megohm*
Capacitance: *1 micromicrofarad to 100 microfarads*
Inductance: *1 microhenry to 100 henrys*
Dissipation Factor: *(R/X) from .002 to 1*
Storage Factor: *(X/R or Q) from .02 to 1000*

Four internal dry cells are the d-c power source and drive a 1000-cycle hummer for a-c measurements. A zero-center galvanometer is used for d-c balance; terminals for external head-set (not supplied with instrument) for a-c null detection.

Type 650-A Impedance Bridge
$260.00

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 *920 South Michigan Ave.* CHICAGO 5
1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 4442

COMPRESSED AIR AND GAS COME OUT OF THE LOGAN

ARIDIFIER

Scrubbed CLEAN AND DRY

INSTALL ARIDIFIERS ON LINES SERVING

- Paint Spray Guns
- Air Tools
- Air Hoists
- Foundry Jogging Machines
- Sand Blasting Tools
- Sand Blasting Rooms
- Metal Spray Guns . . . or Wherever the line must deliver clean, dry air or gas

On any air or gas line 92% of the dirt, oil, scale and water that enter the Aridifier is trapped and removed from circulation. The Aridifier's patented centrifugal-baffle action scrubs air and gas clean and dry . . . protects equipment, prevents freezing, fouling, corrosion and caking, produces best results with spray gun and air tool operations, etc. Easy to install. Self cleaning. Maintains itself. 10 models available. Capacity 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.

Write for This Catalog Now!

Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN - 4443

Presto . . . it's UP!

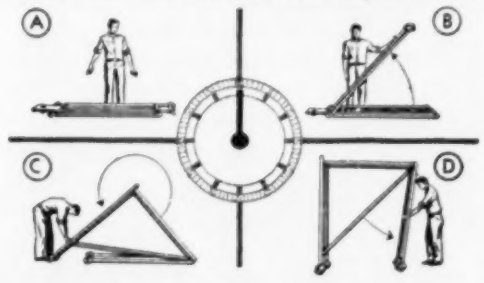
25 ft. "UP-RIGHT" SCAFFOLD-ON-WHEELS

Set up in only 5 minutes!

As if by magic, an aluminum alloy tower of any height desired is ready in minutes! Individual scaffold sections are set one on top of the other. Sections lock into place instantly. The tower rolls down aisles . . . straddles machinery.

HERE'S THE SECRET! . . . Patented ONE-PIECE SECTIONS

Each one-piece section is unfolded by one man in less than a minute! No tools, wing nuts or bolts.



WRITE FOR DESCRIPTIVE BULLETIN

"UP-RIGHT" SCAFFOLDS
DEPARTMENT 142 • 1013 PARDEE STREET • BERKELEY, CALIFORNIA
Factories: Berkeley, Calif. and Teterboro, N. J.
Offices in all principal cities

If you write maker identify as IEN - 4445

TESTING . . Pressure transducer to actuate a meter or oscilloscope

Source: CONSOLIDATED ENGINEERING CORP.
302 N. Sierra Madre Villa, Pasadena 8, Calif.

1.3 ounces

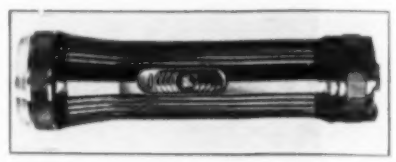
Type 4-118 is a new self-generating bridge type transducer for test installation on equipment such as aircraft turbines, reaction motors, superchargers. It will operate continuously at 300 deg. F. or at temperatures to 500 deg. F. for intermittent periods.

It develops a signal in proportion to the vibrational velocity of the object on which it is mounted for transmission to a meter or oscilloscope. It is insensitive to vibration other than that directly along its axis so it can be used to isolate and measure movement in any one direction. Overall dimensions of the new transducer are 1 by 1 inch.

If you write maker identify as IEN - 4446

LIGHTING . . Hand flashlight is assembled in a plastic housing

Source: BRIGHT STAR BATTERY CO.
202 Crooks Ave., Clifton, N. J.



Guaranteed non-corroding

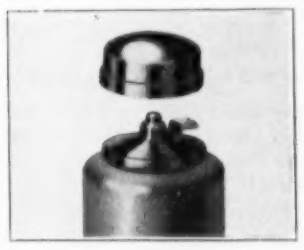
Characteristic in the design of this new No. 1500 Clipper Lifetime flashlight is the rim of light that shows when the unit is placed face downward in an upright position. This is due to the projecting design of the lens and serves as a switch-off reminder. It also spreads illumination for use as a night light.

The unit is guaranteed permanently against damage due to corrosion. Its switch can be replaced if it becomes worn.

If you write maker identify as IEN - 4447

VALVE . . Diaphragm design to cap pressurized spray container

Source: RISDON MFG. CO.
253 Andrew Ave., Naugatuck, Conn.



Sample on request

Depressing a finger lever in this new diaphragm dispensing valve depresses the internal diaphragm and, with it, a feed pipe leading down into the container. This movement uncovers a small orifice that is normally pressure seated against a nylon or teflon disc to open the spray orifice that delivers horizontally in line with the operating lever.

The valve is available to deliver extremely minute uniform particles or a heavy wet spray. Application can be made on containers with standard pressure propellants.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4448

THE *Workhorse* OF SMALL GRINDERS

Aro Short Grinder Model 7149, 17,000 R.P.M.

ARO does it *faster* . . . at *lower cost!* That's why Rohr Aircraft at San Diego —and hundreds of other progressive plants today — prefer ARO. Complete line grinders for jet engines . . . also heavy duty vertical and horizontal grinders of all types. Write for new catalog 60. The Aro Equipment Corp., Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO AIR TOOLS

Also . . LUBRICATING EQUIPMENT . . HYDRAULIC EQUIPMENT . . AIRCRAFT PRODUCTS . . GREASE FITTINGS

If you write maker identify as IEN - 4449

NEW DENISON Flow Control Valves

Optional range of minimum-maximum adjustment — to 3000 psi — without changing spools.

Now you can have full-scale regulation of your adjustable speed circuits *regardless of pump delivery.* Denison Flow Control Valves adjust easily to various pump deliveries *without changing spools.* Simplified, cartridge-type single-spool design . . . ideal for meter-in, bleed-off and other operations at all circuit pressures to 3000 psi. *For extra safety,* valve bodies are built to withstand 5000 psi. Twelve models, 2-port and 3-port types, with or without built-in check, in sizes ¼", ⅜" and ¾". 0 to 28 gpm capacities. Write for details!

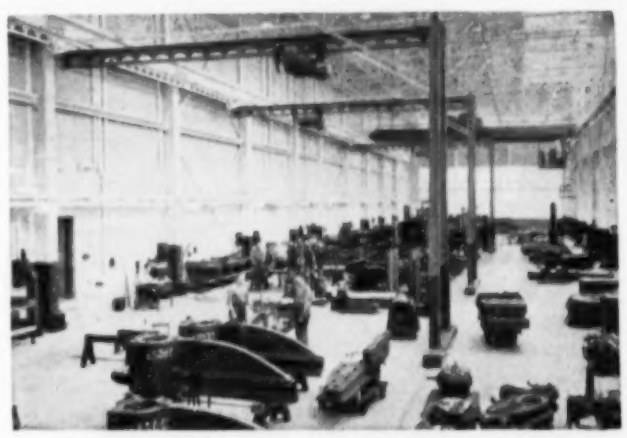
"The Finest Money Can Buy!"

Pumps, Pumping Units, Fluid Motors, Controls

DENISON HydrOILics

The DENISON Engineering Company
1150 Dublin Road
Columbus 16, Ohio

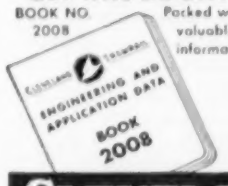
If you write maker identify as IEN - 4450



SINGLE LEG GANTRIES . . .
Little Cranes that Speed Production

Skilled workers often wait five or ten minutes and more for crane service. By providing a sufficient number of gantry cranes, much or all of this lost time can be eliminated and production aided. Gantry cranes are inexpensive; several can usually be purchased for less than the price of an additional large overhead crane and far better handling service provided.

GET THIS BOOK!
BOOK NO. 2008
Packed with valuable information



CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4213 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 4451

This book on AMSCO DREDGE PUMPS can help cut costs in your Dredging Operations

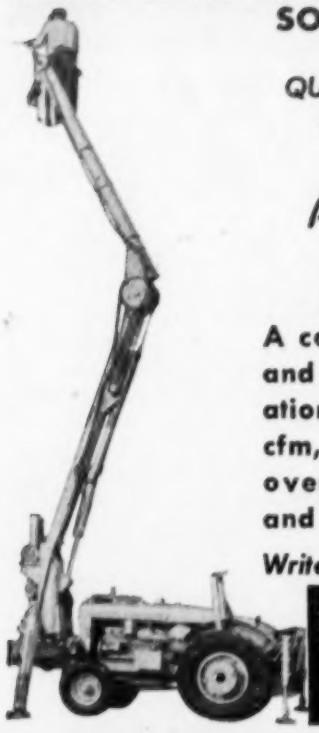
More and more operators are turning to Amsco Dredge Pumps made with manganese steel—"the toughest steel known" in order to save time, money, and materials in their dredging operations.

This book tells you where the real savings can be made and how you can make them. Write for booklet 1052-P.

American Brake Shoe Company
AMERICAN MANGANESE STEEL DIVISION
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

If you write maker identify as IEN - 4452

SKYWORKER
FOR
PLANT MAINTENANCE



SOLVE OVERHEAD PROBLEMS
QUICKLY, EASILY AND SAFELY with the
SCHRAMM
Pneumatractor
equipped with
SKYWORKER
A combination of height and reach, speed of operation, supply of air, 105 cfm, and efficiency, cut overhead on building and shop maintenance.
Write for Bulletin SK1-53

SCHRAMM, INC.
The Compressor People
WEST CHESTER, PA.

If you write maker identify as IEN - 4453

AA-267

What's your ROLL problem?

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachine Commander High Speed Slitter Rewinder

Camachines

If you write maker identify as IEN - 4454

PRECISION
MEASURING

SCHERR
MICROMETERS

Drop-forged steel frame easy to read. "No Glare" graduations. Guaranteed accuracy and unsurpassed workmanship.
For greater savings in dollars and better satisfaction, use "Scherr Tools".
Complete stock. All sizes — MM. or Inch.

MAUSER
VERNIER CALIPER

For inside - outside and depth measurements in 1/1000, 1/128, 1/10mm and 1/20mm.
If not available from your dealer, order direct.
WRITE FOR ILLUSTRATED CATALOG

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST. • NEW YORK 12, N. Y.

NEW LITERATURE—Continued

Identify as IEN - 0271

PARTITIONS . . Movable steel units for factory and office to put up, take down, shift around as conditions require. Types and sizes are given in 8-page "Mobilwalls." Virginia Metal Products Corp., 49-53 Patrick St., Orange, Va.

Identify as IEN - 0272

CLAY PIPE . . Stock sizes and list prices on sewer pipe, drain tile, wall coping, flue lining, liner plates, fire brick. Pocket catalog, 98 pages. American Vitrified Products Co., Dept. L-5652, National City Bank Bldg., Cleveland 14, Ohio

Identify as IEN - 0273

LAMINATING PRESSES . . Hydraulic hot-plate designs for the production of resin-glued plywood, described from their application standpoint in 16-page Catalog 420-A. Plycor Co., 563-67 W. Washington Blvd., Chicago 6, Ill.

Identify as IEN - 0274

PRESS TOOLS . . Hole punching units for mild steel to ⅛ in. in thickness mount on a template or T-slotted plate to produce a desired hole pattern. How to make a number of setups is described in 32-page Catalog BL. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y.

Identify as IEN - 0275

PULVERIZING . . Tube mills in pebble and ball types are covered in 12-page Bulletin 18-B on field of application, construction features, drives, standard sizes. Hardinge Co., 238-42 Arch St., York, Pa.

Identify as IEN - 0276

COOLANT PUMPS . . Horizontal and vertical centrifugal units to mount above or below the fluid level on machine tools, also rotary pumps for handling lubricant to drill heads and machines. Bulletin 160-26, "Pumps," 8 pages. Pioneer Pump & Mfg. Co., 19655-59 John R St., Detroit 3, Mich.

Identify as IEN - 0277

HYDRAULIC PUMPS . . Six basic units combine to meet most any hydraulic power and control function. Catalog 5001, 56 pages, gives details on each unit, tells how to apply them, includes information on assemblies as variable-speed transmissions. Vickers Inc., 1398 Oakman Blvd., Detroit 32, Mich.

Identify as IEN - 0278

OVERLOAD RELAY . . Silicone liquid flows in a tube for time delay in the Silic-O-Netic relay. Trip is instantaneous on short circuit. Diagrams in 4-page Bulletin 5101 show how. Heinemann Electric Co., 313 Plum St., Trenton 2, N. J.

Identify as IEN - 0279

RUBBER PARTS . . Bumpers, grommets, bushings, suction cups, stoppers and other rubber parts made from stock molds are shown with dimensions in new 24-page Catalog M-77. Miller Products Co., 27-31 Warren St., New York 7, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4455

MOSINEE "TURN-TOWLS will save us many dollars"

So says the Purchasing Agent of a Rochester, N. Y. manufacturer after using MOSINEE Turn-Towl "Contro'led Type" Cabinets 8 months. And he adds this comment about the Turn-Towls themselves:

"The drying qualities of MOSINEE towels are such that one towel will do the job where it used to take 2 or 3 of the towels we formerly used."

For efficiency, install MOSINEE "Controlled-Type" Cabinets and Mosinee towels in every washroom . . . they cut towel waste and satisfy all.

MOSINEE
Sulphate Towels
BAY WEST PAPER CO.
1114 West Mason Street
GREEN BAY • WISCONSIN
Division of Mosinee Paper Mills Co.

MOSINEE *means better towel service at less cost.*

Send for SAMPLE TOWELS and data on MOSINEE Controlled Cabinets

If you write maker identify as IEN - 4456

NOW A NEW LINE OF
Automatic
Skylift Trucks
AT NEW LOW PRICES
COMPARE THESE ADVANTAGES

FEATURE	BENEFIT
Only Automatic Skylifts have Silicone insulated motors	Max. protection against motor damage from overheating
Ball bearing mounted carriage and upright rollers	Friction-free lift, less wear —minimum current draw
Full magnetic control with plug-proof protection	Safety—lowest maintenance
Spur and Hypoid gear drive fully enclosed in oil bath	Maximum efficiency under all load conditions
Patented duolift rams with leakage return	Exclusive! Protects ram plunger from dirt, damage
Highest lift speed of any electric truck	Does more work—faster
Heavy section rolled manganese alloy steel uprights	Better wearing quality, proper flange strength
Hydraulic Safety Fuse	Locks load in position if line ruptures
Greatest accessibility for maintenance	Minimum down time, lowest maintenance costs

ONLY AUTOMATIC HAS THEM ALL

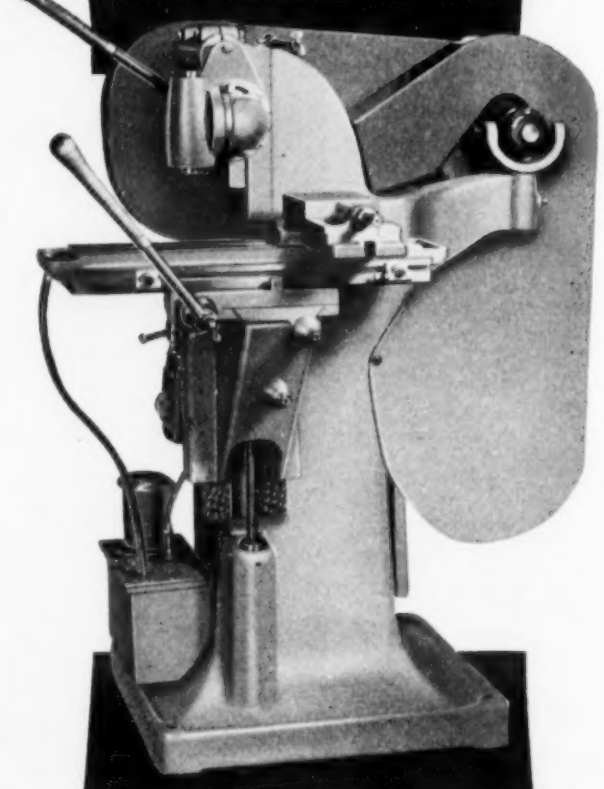
Automatic
LARGEST EXCLUSIVE BUILDER OF ELECTRICAL INDUSTRIAL TRUCKS

Before you buy any lift truck, get the complete money-saving facts on the amazing materials handling savings these new Automatic "Standard" Skylifts will bring to *your business!*
2000 lb. model, only . . . $3575*
F.O.B. Chicago *Moselift Model PRICE IN U.S.A.

109 West 87th Street, Dept. D-3, Chicago 20, Illinois

If you write maker identify as IEN - 4457

Equally Economical and Efficient
for one-of-a-kind or a million of the same milling operations
U.S. NO. 1
ALL-PURPOSE, HAND-FEED MILLING MACHINES are adaptable to specialized production jobs with a variety of automatic devices.



Our suggestions as to how a U. S. No. 1 Milling Machine can cut costs on your particular production needs, as well as complete data on the basic machine and attachments, gladly furnished on request.

United States
MACHINE TOOL CO.
A Division of U. S.-BURKE MACHINE TOOL CO.
BROTHERTON ROAD 5, CINCINNATI 27, OHIO

If you write maker identify as IEN - 4459

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1- 42,

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as IEN - 4460

FLAT OR CONTOURED PRODUCTS SURFACE FINISHED WITH PRECISION

Wrenches, pliers, screw drivers, ax heads—these and other hand tools can be surface finished most efficiently with a Clair Machine. The Model 206-A, specifically developed for this type of service, is equipped for either magnetic or mechanical holding fixtures. Providing a working surface 38" wide and buffs from 3" to 12" in diameter . . . this versatile machine operates on a principle thoroughly proved in many surface finishing operations.

Write for details!

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN - 4461

A Basic Tool

POCKET-SIZE VOLT-OHM-MILAMMETER With Self-Contained Resistance Ranges to 3 Megohms.

Note the wide ranges of this compact design. Note controls, flush with panel. Enclosed selector switch keeps dirt out, retains contact alignment permanently. Resistors, shunts, rectifiers housed in molded base integral with switch; no chance for shorts. Resistors are precision film or wire-wound types, each in its own compartment. Inside view shows details. Batteries easily replaced—positive grip coil assures permanent contact.

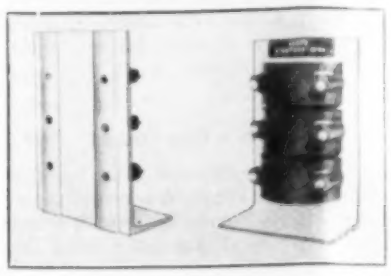
$26.50—AT YOUR DISTRIBUTOR
Prices Subject to Change

FOR THE MAN WHO TAKES PRIDE IN HIS WORK
Triplett

If you write maker identify as IEN - 4462

HANDLING . . Magnetic separator "floats" ferrous sheets for hand feed

Source: BASCO MFG. CO.
3-7 Woodside St., Stamford, Conn.



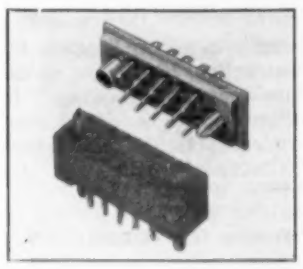
Protects the worker

Steel sheets are suspended free from each other at the top of a pile by the action of this new permanent magnet. It is used in pairs, one unit on each side of a sheet steel pile. It is available in four standard models to handle sheets of various gages. The magnet elements are secured on the rear of a vertical non-magnetic bracket. They induce a magnetic field in the stacked sheets that tends to repel one sheet from the next one. The sheet ends fan out and an operator can grasp one at a time without difficulty.

If you write maker identify as IEN - 4463

CONNECTOR . . Sealed plug assembly to build into electronic equipment

Source: DeJUR-AMSCO CORP.
45-03 Northern Blvd., Long Island City 1, N. Y.



Electronic component

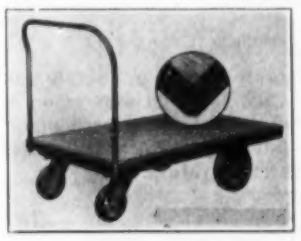
Series H20 designates a new line of hermetically sealed plugs available in 14 and 20 contacts for No. 20 wire. The new plugs will mate with the Series 20 receptacle. It has been developed for pressurized or sealed electronic equipment requiring atmospheric pressure at high altitudes.

The body plate and its flange, for placement in a rectangular opening, as well as the contacts are silver plated.

If you write maker identify as IEN - 4464

TRUCK . . Four wheel platform design, welded frame, load to 7,000 pounds

Source: ALL STEEL WELDED TRUCK CO.
1147-51 Railroad Ave., Rockford, Ill.



For general duty

Standard sizes in the company's new Model CB platform truck range from 24 to 48 in. in width by 48 to 72 in. in length. Mounting is on four wheels, two of which are caster design. All are fabricated steel. Wheel type and bearing design are subject to specification. The truck frame is made in two parts of arc welded steel with a flush-mounted removable wood deck. Stake pockets, also flush, are welded in place. There are no sharp corners.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4465

WRITE US—SEE YOUR DEALER
LOUISVILLE LADDER COMPANY
1101 W. OAK ST. • DEPT. 3A • LOUISVILLE 10, KY.

If you write maker identify as IEN - 4466

Every roll sealed in cellophane stays factory-fresh. Ask your dealer for this handy package of the tape that goes further, wraps right, lasts longer. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

JENKINS Gold Seal Tape
FRICTION . . RUBBER

MADE BY JENKINS BROS MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN - 4467

is its Business

Experts say that the easiest way to make substantial reductions in production costs today is by improving materials handling methods. And it's a matter of record that thousands of plants have cut their production costs substantially by putting "PAYLOADER" tractor-shovels to work on their bulk and loose materials-handling jobs.

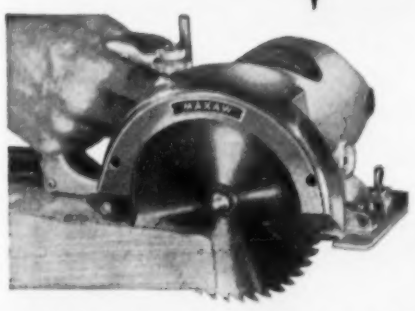
"PAYLOADERS" work indoors and outdoors . . . unload box cars . . . dig, carry, load, dump, lift, pull and push. These versatile tractor-shovels take over laborious, slow, manual shovelling and pushing jobs and do them faster and cheaper. If you have *any* bulk or loose materials to handle around *your* plant, it will pay you to get full "PAYLOADER" information from your Hough Distributor. There's a model to fit your needs — seven sizes from 12 cu. ft. to 1½ cu. yd. bucket capacity. The Frank G. Hough Co., 841 Sunnyside Ave., Libertyville, Ill.

PAYLOADER®
THE FRANK G. HOUGH CO. • Since 1920

If you write maker identify as IEN - 4468

MAXAW 700

magic pivot does it!



$ for $
and
lb. for lb.

CUTS DEEPER AT 45°

All Ball and Roller Bearing

MAXAW $69.50

Now you get a heavy-duty industrial saw that weighs only 10 lbs. and cuts 1⅞" at 45° . . . something no other industrial saw with a blade under 7¼" and costing under $115.00 will do. *magic • pivot* does it! Yes, the simple but long-overlooked *magic • pivot* engineering achievement puts the pivot point closer to the saw shaft, brings you performance found only in *magic • pivot* MAXAWS. Hard-biting "stub-radius" blades stand 3 to 4 more sharpenings . . . last twice as long. The MAXAW does more work . . . faster work . . . and costs less.

Free Pamphlet — Find out what *magic • pivot* can do for you. Send for Pamphlet I-43.

Cummins-Chicago Corp.
DIVISIONS:
Cummins INDUSTRIALS • Cummins Portable Tools
4748 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 334 Lauder Ave., Toronto

If you write maker identify as IEN - 4469

If you write maker identify as IEN - 4470

AIR CYLINDER WITH CHOICE OF BUILT-IN VALVES

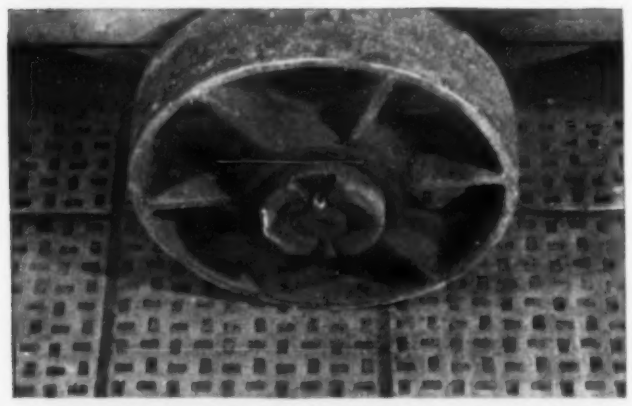
The Bellows Air Motor—the only air cylinder with *built-in* valve and operating controls — now offers a choice of six separate valving arrangements. Now the engineer can choose the method of valving he prefers and still have all the advantages that integral construction means: jet-quick action, compactness, sure-fire control, simple installation.

Learn more about this newest development in the Bellows Air Motor. Write for your copy of Bulletin CL-50, just off the press. Address Dept. IEN-453,

The Bellows Co.
ESTABLISHED 1911
AKRON 9, OHIO
701A

If you write maker identify as IEN - 4471

Acme Steel Floor Plate Makes Floors Last Longer



Here's the economical, long-lasting, commercially proven reinforcement for concrete floor surfaces. Each Acme Steel Floor Plate protects one square foot of floor area, anchored to concrete by 100 barbed prongs. Plate cannot work loose, weave or rattle. No cutting or waste in installation. Compact, easy to handle. Provides rugged protection, longer floor life, safe floor surface for aisles, loading docks, ramps, stock rooms, warehouses. For full details, write Dept. IEN-43-F. ACME STEEL COMPANY. 2840 Archer Avenue, Chicago 8, Illinois.

ACME STEEL

NEW LITERATURE—Continued

Identify as IEN - 0280

BAND SAWING . . Horizontal machines cut metal to 12 by 16 in. in four standard models. These and special machines for unusual jobs are described in 12-page Catalog G-52 along with a blade selection chart by type of material cut. Wells Mfg. Corp., 1111 Madison St., Three Rivers, Mich.

Identify as IEN - 0281

STEEL BAR . . Lead-content cold-finished steel bar has free-machining qualities that average about 45 per cent faster than B1113 screw stock, according to 8-page Bulletin 8, which quotes production examples to prove it. La Salle Steel Co., P. O. Box 6800-AA, Chicago 80, Ill.

Identify as IEN - 0282

SURPLUS . . And new fire extinguishers, instruments, switches, generators, tools, bearings, pumps, valves, clothing and other items in 228-page catalog. Palley Supply Co., 6319-23 San Fernando Road, Glendale 1, Calif.

Identify as IEN - 0283

SWITCHES . . Catalog of 144 pages on safety switches, circuit breakers, motor controls, panelboards, electric duct, connectors. "1953 Trumbullist." Trumbull Electric, Dept. M-1, 39-43 Woodford Ave., Plainville, Conn.

Identify as IEN - 0284

FLAW TESTING . . Locate trouble before it happens by means of the company's non-destructive inspection units, urges 4-page folder, "Good Maintenance Is Prevention." It offers a selection for flaw detection in magnetic and non-magnetic materials, glass, ceramics, plastics. Magnaflux Corp., 5914 Northwest Highway, Chicago 31, Ill.

Identify as IEN - 0285

TEST ROOM . . Radio interference cannot penetrate the company's Multi-Cell shielding room. Construction details in 8-page catalog show why this is possible. Test results, assembly instructions and standard room sizes are given. Shielding Inc., 253 Norman St., Riverside Park, N. J.

Identify as IEN - 0286

THERMOMETERS . . Electric alarm mechanism is one of the features offered for the company's 6-in. dial indicator thermometer and pressure gages in 24-page Bulletin 98214. Actuating methods, scale ranges are presented. Taylor Instrument Cos., 60 Ames St., Rochester 1, N. Y.

Identify as IEN - 0287

THREADING TOOL . . Indexing holder for a 10-tooth cutter mounts on a lathe, presents each tooth in succession to rough and finish cut a thread. Sequence pictures and instructions in 8-page Bulletin 110-D tell how. Rivett Lathe & Grinder Inc., 20-24 Riverview Road, Brighton 35, Mass.

Identify as IEN - 0288

PORTABLE TOOLS . . Electric drills, sanders, saws and accessories, together with pneumatic drills, hammers, screwdrivers, grinders, are presented in 24-page 1953 Buyers Guide. Skil Corp., 5039 Elston Ave., Chicago 30, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4472

2736 Clinton Avenue • Cleveland 13, Ohio

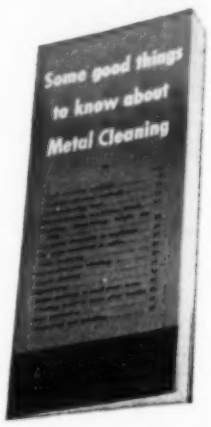
If you write maker identify as IEN - 4473

HOW DO YOU PUT A HEAVY PHOSPHATE COATING ON 90 MM. SHELLS?

HOW CAN WE GET BETTER ELECTROCLEANING AT LOWER COST?

Our 200 Oakite Technical Service Representatives answer questions like these every day. We thrive on questions about tank cleaning, machine cleaning, electrocleaning, pickling, preparation for painting, paint stripping, steam-gun cleaning, burnishing, rust prevention and related subjects.

Send us your questions on metal cleaning. There's no obligation. We'll be glad to advise you the best way we can.



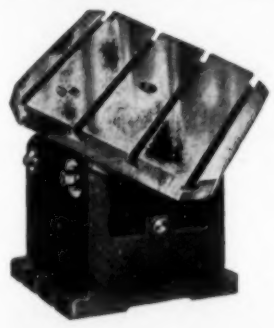
FREE Also ask for our 44-page illustrated booklet *"Some good things to know about Metal Cleaning."* Just write to Oakite Products, Inc., 16A Rector St., New York 6, New York.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

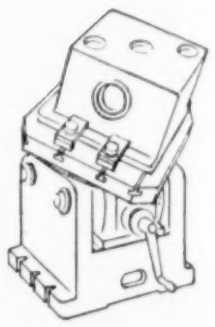
If you write maker identify as IEN - 4474

universal tables



save up to 50% of set up time on radials and boring mills

With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 749.

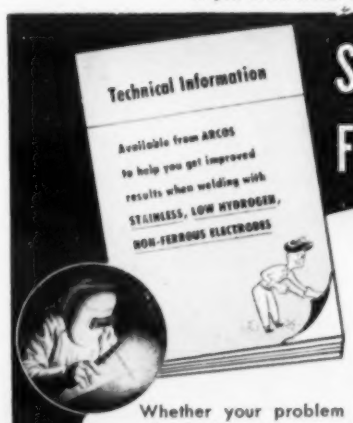


THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 4475

Send for this FREE BOOKLET



A Directory of Technical Data Available From Arcos To Help You On Your Welding Jobs

Whether your problem involves welding stainless, low alloy-high tensile, or non-ferrous metals, this handy Directory will tell you quickly the wealth of practical information available from Arcos for your use. Right at your fingertips it places a convenient recap on what Arcos offers, such as: **Application Chart and Weld Metal Analysis on 56 Different Arcos Electrodes; Stainless Electrode Selector For Welding Stainless Steels; ABC's of Welding High Tensile Steels; plus informative charts, electrode data sheets, reprinted articles on welding, technical guides, etc.**

Send for your copy today. Ask for booklet #10528. There's no obligation. And for dependable welding results at all times, WELD WITH ARCOS STAINLESS, LOW HYDROGEN and NON-FERROUS ELECTRODES.

ARCOS CORPORATION
1500 South 50th Street • Philadelphia 43, Pa.

If you write maker identify as **IEN - 4476**

With

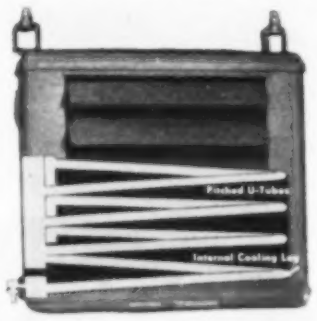
THERMOLIER

... the Grinnell

Unit Heater ...

YOU GET

CONTINUOUS RATED CAPACITY



Failure of unit heaters to give freedom from collected condensate in the heating element can interfere with heat output and adversely affect capacity.

A Thermolier Unit Heater successfully handles this drainage problem with its pitched U-tubes and internal cooling leg, through which all the condensate passes. In fact, condensate cooling is so efficient with Grinnell Thermoliers that a thermostatic trap — the simplest and least expensive of all traps — can be used with every model. Condensate temperature is lowered to the point where the trap is always draining — giving Thermolier Unit Heaters their *continuous rated capacity*.

For further details, call your local Grinnell distributor — or send for catalog.

GRINNELL

THERMOLIER UNIT HEATERS

GRINNELL COMPANY, INC.
Executive Offices: Providence, Rhode Island
Sales Offices and Warehouses in Principal Cities

If you write maker identify as **IEN - 4477**

UE

TEMPERATURE PRESSURE CONTROLS

Improve **YOUR PRODUCT!**

More dependable, more accurate controls bring big sales results!

Type E8N
Indicating Temperature Control, ranges 300° or 600° between −150° to 600° F. calibrated adjustment and ambient compensated.

Type J40
Compact, skeleton pressure control for local mounting to control up to 250 psi in general industrial applications.

Type J96
Sensitive pressure-vacuum control for 30" hg. to 100 psi with explosion-proof housing for hazardous locations.

Progressive manufacturers throughout the country know the importance of having the *right* temperature or pressure control on their products. It really pays off — in product quality and in SALES. Hundreds of companies, of all types, turn to United Electric for the finest controls, to be used as original equipment on their products.

Controls are developed from United's wide line of standard models or are specially built as a result of teamwork by United Electric engineers and the manufacturer's product development group.

We can handle practically any pressure control problem between limits of 30" mercury vacuum to 1000 psi or temperature control problems between limits of −150° F. to 600° F.

Want to know more? Write for our new catalog. It shows pressure and temperature controls for marine, industrial aircraft and representative special purpose uses. And it's yours for the asking.

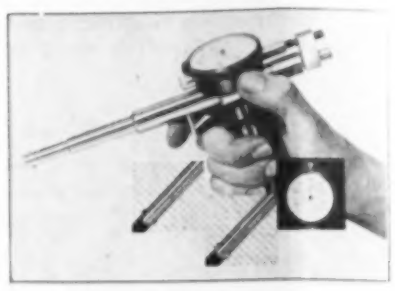
Write for New free Catalog...

UNITED ELECTRIC CONTROLS CO.
84-I School Street, Watertown, Mass.

If you write maker identify as **IEN - 4479**

GAGE . . Dial indicator instrument to check internal groove diameters

Source: RIMAT TOOL CO.
19-23 W. Dayton St., Pasadena 2, Calif.



Accurate to 0.0001 inch

Standard designs for O-rings and for snap rings are available in the company's new Dial Bore gage. The dial indicator reads over and under an established dimension. Smallest size for O-rings reads 0.310 in. minimum and 0.425 in. maximum. Largest is between 0.680 and 0.865 inch. The range for snap rings is 0.310 to 0.380 in. and 0.680 to 0.840 inch.

A trigger is pulled to retract the gaging points for entry into a grooved hole. The reading is made with the trigger released. Measuring reach is about 3 inches. The dial reads over and under to 0.003 inch.

If you write maker identify as **IEN - 4480**

PAINTING . . Aluminum pigment in liquid vehicle for plant interiors

Source: NELSONITE CHEMICAL PRODUCTS INC.
902 Monroe Ave., N. W., Grand Rapids 2, Mich.

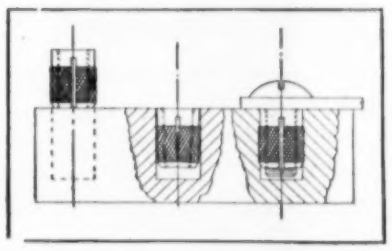
Reflects light and heat

Alumicote trade names a new combination of aluminum and the company's chemical protective liquid vehicle. Application is by brushing, spraying or dipping. One or more coats depend on the service requirements. The resulting film prevents metal corrosion, protects wood against rotting and warping, seals the surface of concrete structures.

If you write maker identify as **IEN - 4481**

FASTENING . . Threaded insert anchors screw in metal or plastics

Source: BRUSH NAIL EXPANSION BOLT CO.
253 Corrigan Lane, Greenwich, Conn.



Aluminum in stock

New design in the company's line of screw locking inserts is intended for blind hole application in plastics and in metal castings. The insert is cylindrical in shape with an internal thread and external knurling. It is split axially part way.

Application is in a hole a little less in diameter than the crown points of the knurled section so the insert closes in. It is expanded so the knurling bites into the wall of the hole when the screw is threaded in. Sizes range from No. 4 to ¼-in. screws. Corresponding lengths are 3/16 to ½ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4482**

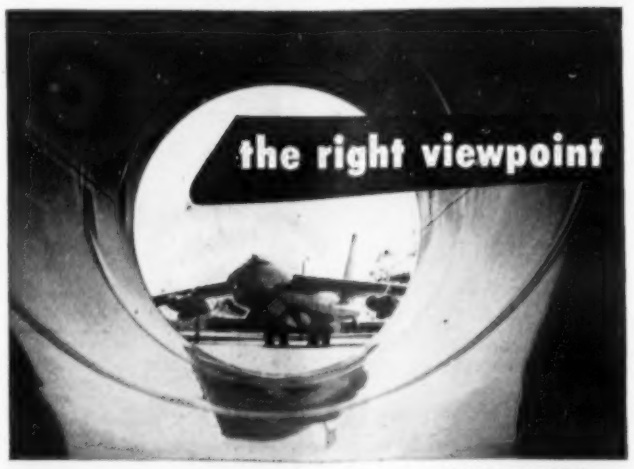


Photo Courtesy ATC

When you're thinking about aluminum or magnesium castings, you need the services of an organization with the right viewpoint.

We're referring, of course, to the right viewpoint toward the best possible use of these two light metals. . . ability to do the job; . . . service; . . . adequate facilities for production; . . . experience.

We here at Wellman like to think we have a combination of all these things . . . trained, interested personnel, three complete foundries and a modern pattern shop, almost a half century of experience in solving casting problems.

Why don't you try us and see how we look from your viewpoint?

- **Well-Cast Aluminum and Magnesium Castings**
- **Well-Made wood and metal patterns**

THE WELLMAN BRONZE & ALUMINUM CO.
DEPT. 9, 12800 SHAKER BLVD., CLEVELAND 20, OHIO

If you write maker identify as **IEN - 4483**

BOOST PRODUCTION

COBURN

OVERHEAD CONVEYING EQUIPMENT

Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

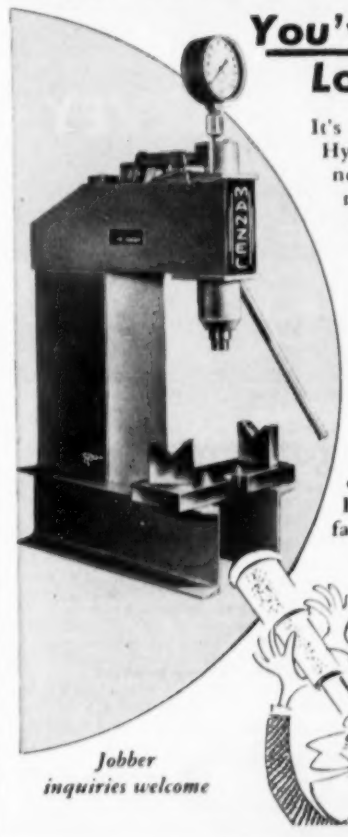
EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 4484**

The ARBOR PRESS

You've Been Looking For!



It's the new Manzel 10 Ton Hydraulic Arbor Press...engineered to meet a variety of needs in manufacturing plants and automotive service stations. The long ram stroke and unusual depth and width of throat make it adaptable to straightening, material testing, bending, bearing or bushing work, and many other uses. Gauge is optional.

The press is portable...or can be permanently mounted on bench, column, or wall. Power unit operates 3 times faster. Ram is self-retracting. Write today for complete information.

Jobber inquiries welcome

Manzel
242 Babcock Street
Buffalo 10, N. Y.

If you write maker identify as **IEN - 4485**

with Veelos on your machines
v-belt replacement takes up to 90% less time

ACTUAL in-plant records prove that Veelos v-belt can be installed *and operating* in up to 1/10th the time regularly needed to do the same job using endless v-belts.

Matched sets of Veelos are quickly made up in your own stockroom or at the machine by just coupling the correct lengths for the particular drive. Even outboard bearing drives are no problem. You *never* remove these outboard bearings, because Veelos is installed by simply coupling it around the shafts and running it onto the sheaves.

VEELOS
THE LINK
V-BELT

Write for a copy of the Veelos Data Book. It's fully illustrated and packed with useful engineering data. We'll be glad to send a copy to you.

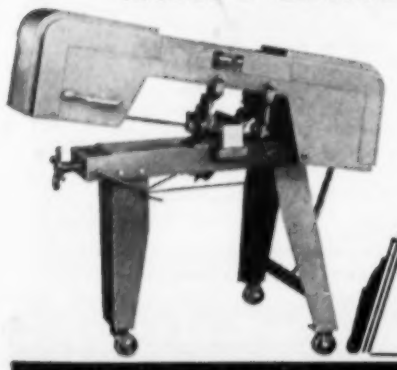
MANHEIM MANUFACTURING AND BELTING CO.
651 Manbel Street, Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 4486

Yes, this Johnson "Junior" Band Saw can do a real job. It's small and handy, yet sturdy, and has speed, versatility and accuracy. Use it for production or occasional cutting in small shops or large plants. Furnished with or without casters. Roll it or carry it. Move it in a jiffy to do countless jobs.

JOHNSON "JUNIOR"
MODEL B BAND SAW



5" x 10" capacity. Inexpensive. Will pay for itself many times over.

ALSO MODEL J, a heavy, sturdy tool. Capacity 10" x 18".

Write for CATALOG!

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 4487

LET DOLGE MAKE a scientific, factual SANITARY SURVEY of your Premises at NO cost to you!

Here's what we do—

1 Your Dolge Service Man inspects your premises and sends his complete record to our home office;

2 Our technological staff analyzes your sanitary maintenance problems. You receive, without charge or obligation, a complete and detailed report;

3 Where the use of Dolge products is indicated, and where you accept our recommendations, your Dolge Service Man "follows through" in instructing your staff and returning for periodic reinspection.

Please write for Dolge Sanitary Survey booklet.

dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 4488

BUSCHMAN CONVEYORS
save $10,000 to $12,000 annually
at UARCO Inc.

Over a third of a mile of BUSCHMAN belt and roller conveyors have replaced a skid system of handling in-process forms at UARCO Inc., noted business form manufacturer. A 30% reduction in manhours plus a saving of 2000 sq. ft. of floor space effects a $10,000 to $12,000 saving annually. The above is typical of the "pay-for-themselves" records being established by BUSCHMAN. Each installation is complete to meet your specific needs—dictated by your products, process and space available.

WRITE FOR BULLETIN NO. 60

THE E. W. BUSCHMAN CO.
4479 Clifton Avenue
Cincinnati 32, Ohio

PRODUCE MORE ... FOR LESS
Buschman Conveyors

NEW LITERATURE—Concluded

Identify as IEN - 0289

POWER TRUCKS . . Low and high lift electric platform trucks, fork trucks, mobile cranes, attachments to do a variety of material-handling jobs. Bulletin B-167, 12 pages, provides an illustrated review on a line. Elwell-Parker Electric Co., 4660 St. Clair Ave., Cleveland 3, Ohio

Identify as IEN - 0290

STEEL TUBES . . Made of Croloy 5 alloy steel for elevated temperature service as furnace tubes, pipe, super-heater tubes. Bulletin TDC-146, 6 pages, covers mechanical properties, fabrication, working pressures. Babcock & Wilcox Co., 4027-31 Fourth Ave., Beaver Falls, Pa.

Identify as IEN - 0291

TUBE FITTING . . Shock and vibration have no effect on the Sealastic tube fitting due to the cushioning action of a synthetic-rubber seal ring. How it works is shown by cutaway views in 12-page "Sealastic" catalog. Chicago Forging & Mfg. Co., 2010 Southport Ave., Chicago 14, Ill.

Identify as IEN - 0292

TUBE FITTING . . Stainless steel flare fitting uses Teflon inserts in its self-centering seat for a leakproof seal. Test data and available styles in ⅛ to 1-in. sizes are given in Bulletin K-151, "Koncentrik Fittings." Special Screw Products Co., 5443-47 Dunham Road, Bedford, Ohio

Identify as IEN - 0293

OPERATING VALVES . . Air and hydraulic types for single and double-acting power cylinders, ⅛ to 1¼-in. pipe size, in hand, foot, power and pilot-operated designs, all in 16-page Bulletin 1000 with circuit diagrams. Ledeen Mfg. Co., 1602 S. San Pedro St., Los Angeles 15, Calif.

Identify as IEN - 0294

OPERATING VALVE . . Solenoid pilot design for air, vacuum, oil, water, inert gas can operate to 400 cycles per minute. Sectional view, standard models in 4-page Bulletin PB. Valvair Corp., 949 Beardsley Ave., Akron 11, Ohio

Identify as IEN - 0295

PINCH VALVE . . Rubber tube is pinched by a yoke-supported clamp to restrict flow or shut it off. The valve handles air, water, chemicals, abrasive, corrosives. Catalog FL-382, 24 pages, on selection. Farris Flexible Valve Corp., 550 Commercial Ave., Palisades Park, N. J.

Identify as IEN - 0296

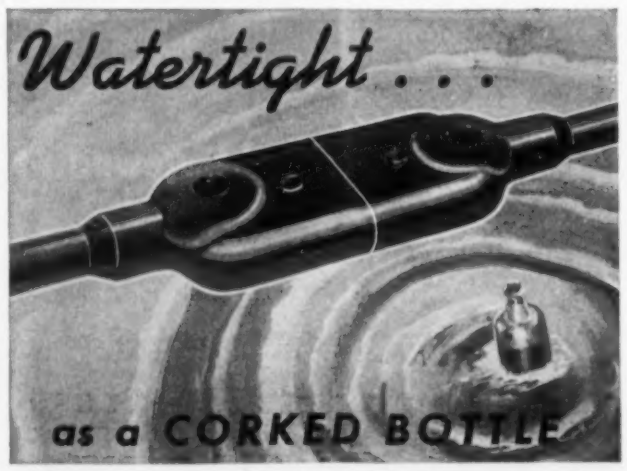
WEED KILLER . . Powder chemical is mixed with water and sprayed on outdoor industrial areas to kill unwanted vegetation. Color pictures in 12-page "CMU Weed Killer" show results obtained. E. I. du Pont de Nemours & Co., Grasselli Chem. Dept., 2518 Nemours Bldg., Wilmington 98, Del.

Identify as IEN - 0297

WEIGHING . . Electronic scale employs strain gages to weigh loads to 200,000 lb. with speed and accuracy. Data Sheet 10-18-2, 4 pages, shows the part played by Brown ElectroniK equipment in the Streeter-Amet Ametron scale previously described IEN-8565-51. Minneapolis-Honeywell Regulator Co., 4456 Wayne Ave., Philadelphia 44, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4489



Moisture cannot penetrate the one-piece Neoprene body of a JOY electrical plug . . . when engaged, even its contacts are enclosed in a protective Neoprene housing through the *cork-like* action of JOY's famous water-seal. Permanently vulcanized to cable, it cannot crack . . . won't lose its shape . . . and requires no special considerations to insure a long life of useful service. A favorite since '26, JOY electrical connectors are now available in styles and sizes for nearly any portable electrical power transmission need. Why risk electrical misfits when the best actually costs less, in the long run? For more details ask for your free copy of Bulletin MC108 today!

ME 152.4

MORE THAN 100 YEARS OF ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 4490

NEED GEARS?

250,000 cost-wise industrial buyers agree . . .

Best Buy is BOSTON gear
STANDARD STOCK GEARS

Over 2000 types and sizes in stock.
Metal—Non-metallic—Fabroil.

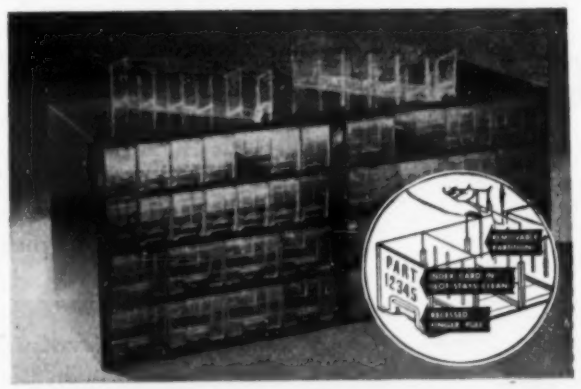
In Stock at your nearby
BOSTON GEAR DISTRIBUTOR

Catalog on request. Ask your Boston Gear Distributor, or write: Boston Gear Works, 63 Hayward Street, Quincy 71, Mass.

If you write maker identify as IEN - 4491

NOW SAVE $20.00 ON THIS SMALL PARTS CABINET

SPECIAL INTRODUCTORY OFFER
EXPIRES MAY 15
ACT NOW!



- 32 See-thru plastic trays
- 4 removable dividers in each tray
- 2 handy tray sizes
- Index card stays clean in slot at front of tray
- Light-weight; no dead space
- Sturdy steel cabinets fit into standard shelving and are made to "stack".

NOW ONLY $49.50

for COMPLETE STEEL CABINET with 32 trays and up to 160 bins . . . Former Price $69.50

LIMIT 6 CABINETS ON THIS SPECIAL OFFER . . . EXPIRES MAY 15

WHY THIS SPECIAL OFFER IS MADE!

Production is way up because demand has grown fast—we pass the cost saving on to you! There's hardly an industry or kind of shop that can't make practical use of these flexible, compartmented drawer sections for better, classified storage of all kinds of small parts and materials! Thousands are now in use. Widely used by offices and laboratories too! They save money, save space, save time!

IMMEDIATE DELIVERY . . 2 SIZES

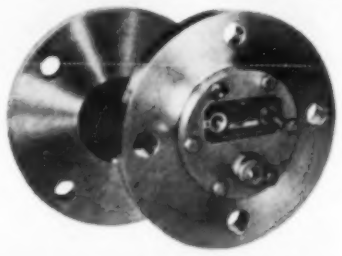
- Steel cabinet with 32 large trays and dividers to make up to 160 bins. Trays: 11⅜" x 3¾" x 2¾" deep. SPECIAL LOW PRICE ... $49.50
- Steel cabinet with 56 trays and dividers to make up to 280 bins. Trays: 11⅜" x 2" x 2¾" deep. SPECIAL LOW PRICE ... $57.50

All Cabinets Same Size, 34½" Wide, 11⅝" Deep, 14¾" High.

ANDREW TECHNICAL SERVICE
3805 N. CLARK STREET • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 4493

clogging or corrosion troubles?



TAYLOR LIQUID LEVEL TRANSMITTER

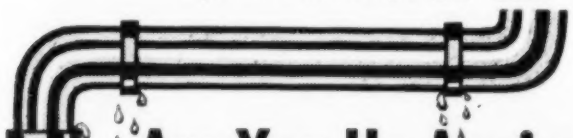
Want to measure accurately the level of liquids that are corrosive or viscous—or contain solids? The Taylor 229R Liquid Level Transmitter is a force-balance unit specifically designed to measure pressure and liquid level of viscous or corrosive liquids and liquids containing solids. No levers or cams, so no frictional error. It's adaptable to open as well as closed tanks, under pressure or vacuum, and can be attached to the bottom or side of the tank to give accurate level measurement. Air output can be connected with an indicator, recorder or controller as much as 1,000 feet away from transmitter.

Ask your Taylor Field Engineer or write for **Bulletin 98069.** Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 4494



Are You Up Against a Tough Sealing Problem?

Our specialty is ***plastic*** compounds for industry... compounds used for sealing pipe joints, for caulking, bedding, glazing, etc. . . . compounds that withstand high temperatures and all solvents including acids. . . ***plastic*** compounds that STAY ELASTIC giving long service. Write us about YOUR sealing problems. We are equal to any requirements no matter how "special."

ACID RESISTANT CEMENTS

HI-HEAT COMPOUNDS

FURNACE AND BOILER CEMENTS

CHLORO-Seal

Chlorine producers save money using this famous plastic compound for sealing in and out pipe and cover joints in chlorine cell operations. CHLORO-Seal stays ELASTIC. It gives permanent protection—providing a cushion seal that won't crack or chip off due to expansions and contractions. Good for temperatures to 300 F. Try CHLORO-Seal for perfect satisfaction!

The ARMSTRONG COMPANY
241 S. Post Street, Detroit 17, Mich. EST. 1911

If you write maker identify as IEN - 4495

CHANGE DRILLS IN A JIFFY

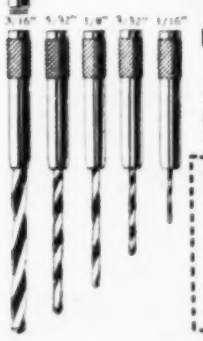
NOW! ELIMINATE SPECIAL LENGTH DRILLS

Widely used in the aircraft industry, this handy 9/32" diameter LITTLE BEAVER DRILL EXTENSION and 8-1/2" x 1/4" extension rod makes small diameter, recessed drilling easy in hard-to-get-at-areas. Used on metal and wood with regular drills.

The LITTLE BEAVER DRILL EXTENSION is used in power and hand drills, lathes, drill presses, turret lathes for home workshop, production, cabinet making and boatbuilding.

All for the one low price of **5.95 PER SET POSTPAID**

SET CONSISTS OF
5 EXTENSION CHUCKS
8½" x ¼" EXTENSION ROD
5 HIGH SPEED DRILLS,
Sizes 1/16"—3/32"—1/8"—5/32"—3/16"



FITS ALL 1/4" CHUCKS

No C. O. D.'s
Send check or M. O. to

LITTLE Beaver DRILL EXTENSION-CHUCKS

BEAVER TOOL CO.
183 E. New York Ave., Box 298, Huntington, N. Y

Please send me ____ sets of the Beaver Extension Chuck and Rod at $5.95 per set.

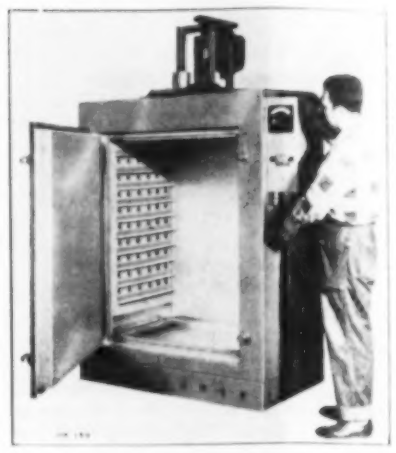
Name .....

Address .....

If you write maker identify as IEN - 4496

HEATING . . Electric oven, convection design, 100 to 600 deg. F.

Source: BLUE M ELECTRIC CO.
304-10 W. 69th St., Chicago 21, Ill.



Provision for shelves

Coil and armature baking, plastic preheating, curing coatings on plating racks, core and synthetic finish baking, tempering, curing electrical insulations are typical applications for this new Batch Oven. It is available in three chamber sizes. They measure 24 by 48 in. in depth and height by 24 to 48 in. in width. Input is maximum at 10 to 18 kw. on 220-volt 60-cycle ac., single or three phase.

Construction is in steel with 4 in. of Fiberglas insulation. The chamber and inside faces of the door are sprayed with aluminum paint. Heat is supplied by Modella elements under control of a power contactor, thermostat and selector switch.

A motor driven blower is mounted in the roof to circulate air vertically and, through both side walls, horizontally. Positive controls are provided for exhaust and fresh air intake. A square asbestos panel is built into the rear wall to release safely in case of excessive internal pressure.

If you write maker identify as IEN - 4497

OIL CONDITIONER . . Takes sludge, water, acids from industrial oils

Source: HILLIARD CORP.
35 W. 4th St., Elmira, N. Y.

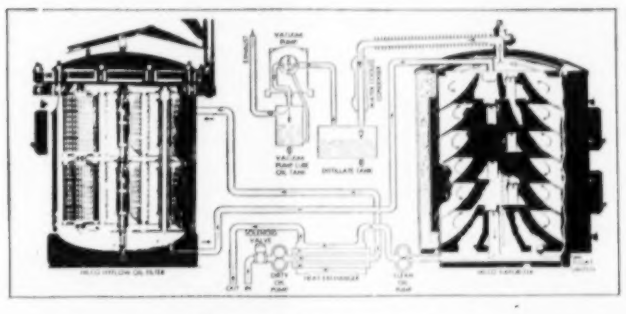


Diagram shows sequence

The company announces new capacity, to 500 gph., by increase in the size of its previously developed oil conditioning equipment in its Hyflow line. Lubricating and industrial oils are kept in operating condition by continuous removal of all contaminants such as dust, moisture, fuel dilution, sand, scale, corrosion, metal chips, carbon, acids.

Oil to be treated is brought in through a pump and heat exchanger from which it flows to the filter for removal of solids. The solids-free oil flows to the vaporizer where it is heated under vacuum created by a second pump. Volatile materials are removed in this stage. The vapors can be condensed for disposal or recovery. The hot clean oil returns to its point of use, or to storage, through the heat exchanger.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4498

READ AIR VELOCITIES instantly... accurately... anywhere...

...WITH THE

ALNOR VELOMETER

Alnor Velometer, a precision-built, self-contained, portable instrument, gives you instant, accurate readings of air velocities anywhere—in plants, mines, mills or laboratories. Measures speed of air flow through ducts, grilles, furnaces, spray booths or in the open. This rugged instrument needs no special care or delicate handling—anyone can use it and get accurate readings. Needs no calculations or reference charts. Available in a wide variety of scale ranges, and with a full assortment of jets and fittings for every application. You'll want full details and prices, so write for Bulletin 2448-G, Illinois Testing Laboratories, Inc., Room 517, 420 No. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 4499

TO THE INGENIOUS

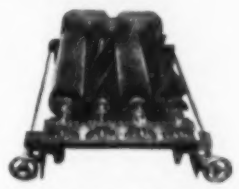
Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.



The economy of continuous operation made possible by continuous scrubbing to remove hard baked deposits from steel conveyor in bake oven. Power driven unit applies action through two types of Fullergript brush strip.

INDUSTRIAL Fuller BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 4500

BRAND NEW all-purpose CONE SEAL with TEFLON*

*DuPont Trade-mark for tetrafluoroethylene resin

"JOHN CRANE" TYPE 19 CONE SEAL WITH TEFLON

1. Temperature range: −100° to +450° F.
2. For all services, including water, oils, acids.
3. Pressures to 200 psi.
4. Has all the plus requirements of a good seal: positive drive, axial and radial movement, free sliding flexible spring action to compensate for wear of carbon washer, ease of application and replacement, long life, compactness.
5. Packaged seal, presently designed for small shafts ¼, 5/16, ½, 5/8, ¾" dia.
6. Tooled for the high production field. Has a wide field of application.
7. Can be manufactured at an economical price.
8. Manufactured in the "pressed-in" type where seal unit is held stationary.

In the early stages of any seal application we might be helpful. For instance—the metallurgy of a seal is important; you may have space limitations; or you may have r.p.m. problems. These are only a few points. Drop us a line.

Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Illinois.

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 4501

Q. What is the simplest means of producing suction pressures down to .002"?

A. The I-R STEAM-JET EJECTOR

Producing suction pressure by means of a steam jet and venturi-shaped diffuser, it operates *without any moving parts!* There's nothing mechanical to wear out—nothing to lubricate—nothing to require adjustment or replacement. No vibration, either. And little or no foundation is required for installation.

I-R Steam-Jet Ejectors are designed for high sustained efficiency with practically no attention or maintenance. They are available in single-stage, two-stage and multiple-stage types for vacuum pressures down to .002" Hg absolute—in any desired capacity, for handling any mixture of air, gases and vapors.

Pre-coolers, intercondensers and aftercondensers can be supplied as required for any application. For further information, send for Bulletin 9013A. No obligation, of course.

684-4

11 Broadway, New York 4, N. Y. **Ingersoll-Rand**

If you write maker identify as **IEN-4502**

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING

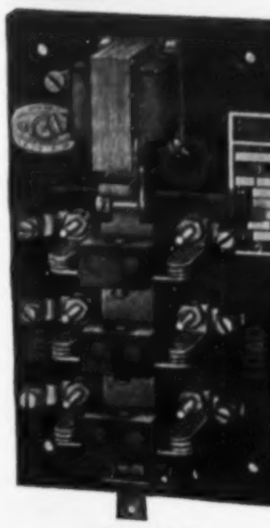
This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.



TYPE SC 33

SEND FOR FREE CATALOG

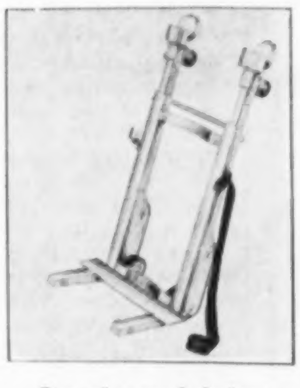
This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as **IEN-4505**

TRUCK . . Magnesium hand unit for appliance handling, 35 pounds

Source: AMERICAN PULLEY CO.
4244 Wissahickon Ave., Philadelphia 29, Pa.



One of several designs

Magnesium frame on this new Type-EBC appliance handling truck is fitted with telescoping handles, rubber padded contact surfaces, a load retaining strap and curved cross bars. It is mounted on 5-in. ball bearing rubber tread wheels and on a pair of endless roller supported belts, the latter for movement up or down a stairway.

Below the handles are swivel casters so the truck and a load can be moved horizontally in any direction on four-wheel support. The nose prongs are fitted with folding handles to assist in lifting the truck and a load into a motor vehicle. Height is adjustable between 46 and 64 inches. Width at the handles is 20 inches. The nose plate measures 24 by 4 inches. The load prongs are 20 by 13¾ in. in overall dimensions.

If you write maker identify as **IEN-4506**

SWITCH . . Pressure operated, guards against flow failure in a duct

Source: HENRY G. DIETZ CO.
12-18 Astoria Blvd., Long Island City 2, N. Y.

Silver contacts

Failure in air flow through a duct carrying ventilating, heating or cooling air, results in actuating the air-held contacts in this new Type 101P design of the company's sensitive pressure operated switch, previously described IEN-9197-47. The unit guards equipment served by the air against failure in air supply. Standard operating range is to 20 in. of water with fixed differential between 0.2 and 2 in. of water. The switch contacts rate 10 amp. on 110-volt ac.

The new assembly employs a silicone impregnated glass cloth diaphragm for operation in high or low temperatures. Mounting is on a solid vibration-free vertical wall with the curved pick-up tube inserted through a ½-in. hole into the duct.

Identify as **IEN-4507**

Back in 1941 Elwell-Parker Electric Company made a new combination of an industrial truck and a power driven wrench to open and close the bottom gates on railroad hopper cars. The truck, with its wrench and one man, replaced several crews of two men each to do the job at an ore handling dock in Cleveland. Today, 12 years later, the same equipment is still at work on the opening and closing job, one truck, one operator, one wrench.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

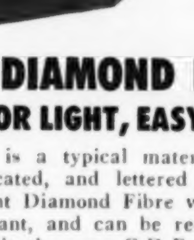
If you write maker identify as **IEN-4509**

WHAT DO YOU WANT IN AN INDUSTRIAL FLOAT

Whether you need floats for high or low pressure service, high or low temperatures, corrosion resistance, extreme buoyancy, wear resistance, or for any other special characteristics, you can get it in a high quality stainless steel float from Chicago Float Works. All sizes, and shapes available with *all* standard spud connections.

If your float has to be made up as a special, you can get exactly what you specify from Chicago Float. Over 35 years' experience in the business of building high quality industrial floats is your assurance of the best. Check with Chicago Float today for all your float requirements.

- Standard Diameters 2 to 10".
- Pressures to 1000 lbs.
- Temperatures to 800° F.
- All Standard Spud Connections.
- Top quality Stainless Steels.
- Non-corized weld for superior strength, and corrosion resistance available where required.



Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as **IEN-4503**

NEW CROWN COLOR CODE PAINT
for quick, easy identification

- JUST SPRAY ON
- HANDY CAN
- WIDE RANGE OF COLORS

THE SIMPLEST WAY TO COLOR CODE FOR:
- Type of Material
- Hardness or Alloy
- Supply Source
- Receiving Date
- "OK" or Reject
- Any Application Where Coding or Identification of Metal Is Needed

Easier to use and faster. Requires no brushes or open containers. Dries dust-free in 5 to 10 minutes, tack-free in 15 to 20 minutes and hard in one to two hours. Full bodied, with excellent "tooth" for firm adhesion, even to dirty or semi-greasy surfaces. Eliminates most need for surface preparation. Resists rubbing off or weathering outdoors. Fast, opaque colors.

12 COLORS . . . ORDER BY NUMBER:

No.	Color	No.	Color
10	Red	17	Pink
11	Green	20	Orchid
12	Yellow	21	Copper
13	Dark Blue	22	White
14	Orange	23	Black
15	Light Blue	25	Aluminum

Prices F.O.B. Woodstock, Illinois

$1.59 PER 12 OZ. CAN

15% discount in case lots of 12 cans of one color
Freight allowed on shipments of 8 cases or more
Applicable state or local sales tax extra

CROWN INDUSTRIAL PRODUCTS COMPANY
715 Amsterdam Ave., Woodstock, Illinois

Please ship me the following CROWN Color Code Paint:

Quantity	Quantity
____cans of Color No.____	____cans of Color No.____
____cans of Color No.____	____cans of Color No.____
____cans of Color No.____	____cans of Color No.____
____cans of Color No.____	____cans of Color No.____

☐ Our Purchase Order No.________ ☐ Check enclosed

COMPANY________
ADDRESS________
CITY________ZONE____STATE____
____
Authorized Signature

If you write maker identify as **IEN-4510**

DIAMOND FIBRE BOXES
FOR LIGHT, EASY PARTS HANDLING

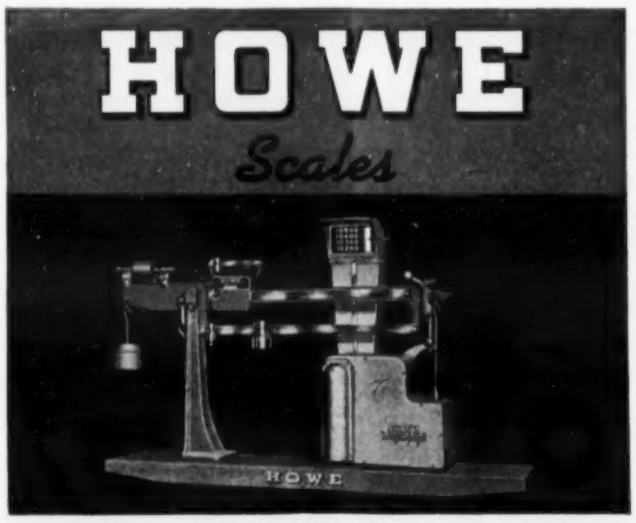
This is a typical materials handling job designed, fabricated, and lettered by C-D-F. Low-cost, lightweight Diamond Fibre was used. Fibre is strong, oil resistant, and can be readily formed. All work was done in the same C-D-F plant that made the fibre . . . one order solves your worries.

If you buy boxes, barrels, trucks, trays, receptacles of any size or shape . . . think of C-D-F, makers of top-quality Diamond Vulcanized Fibre. Talk to the man who knows . . . your C-D-F sales engineer . . . sales offices in principal cities. Write for big Receptacles Catalog and free Plastics Machining Notebook.

THE NAME TO REMEMBER . . . DIAMOND FIBRE RECEPTACLES

Continental-Diamond Fibre Company
NEWARK 21, DELAWARE

If you write maker identify as **IEN-4508**



NEW PROJECTION TYPE WEIGHT INDICATION

77 HOWE Weightograph

Here is the latest development in automatic scale indication!—The new HOWE 77 WEIGHTOGRAPH —a weighing accessory which can be attached to any make of beam scale. Modern optical projection and eye-level periscope instantly flash exact weight in large, illuminated, crystal-clear figures under all sorts of light including daylight. Check the many "plus" features of the 77 HOWE WEIGHTOGRAPH for simple, fast, accurate and trouble-free weighing on your beam scale.

Write for descriptive folder . Form No. 668 Dept. IE-4

The HOWE SCALE Co.
RUTLAND, VERMONT

If you write maker identify as **IEN-4511**

PERFECT HOLES

- A NEW INVENTION!
- A NEW MACHINING METHOD! ROTARY BROACHING*
- A NEW NAME-"ROTARY BROACH"*

ROTARY BROACHES may be used in lathes, turret lathes, automatics, drill presses, etc., to replace reamers. They produce perfect holes with finishes that can only be compared to honing. They last longer before grinding is necessary and may be resharpened 10 to 30 times. They produce perfect holes at a fraction of the cost of those produced by other methods. Eliminates grinding, lapping, honing and boring.

USE THIS NEW MACHINING METHOD—ROTARY BROACHING*
You Cannot Afford Not To Use Rotary Broaches (Write for free descriptive literature)
* "Rotary Broach" and "Rotary Broaching" are new names coined and copyrighted by Shearcut Tool Company
Patented in Canada U.S. and Foreign Patents Pending © 1947

When you want Perfect Holes, consult
SHEARCUT TOOL COMPANY
Box 746, Dept. I-43 • Reseda, California

If you write maker identify as IEN-4512

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

USE "RING SEAT" CENTER DRILLS

IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple, quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES
13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

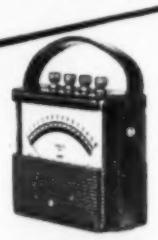
If you write maker identify as IEN-4513

Specialized and Multi-purpose INSTRUMENTS for RESEARCH·PRODUCTION·MAINTENANCE

For complex, or just routine measurement jobs, these and other specialized WESTON Instruments save time and assure dependable measurements. For information on the complete line, see your local Weston representative, or write . . . WESTON Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

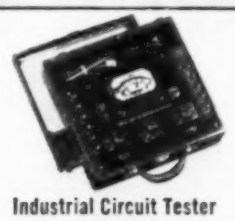
Model 622
Ultra-Sensitive Instruments

Portable d-c and a-c thermo instruments for precision measurement of potentials and minute currents in electronics or laboratory research.



Model 901
Portable Test Instruments

Available in d-c, Model 901—and a-c, Model 904, single and multiple ranges of wide coverage. Excellent scale readability and shielding. Accuracy within ½ of 1%.



Industrial Circuit Tester
Model 785

A multi-range, multi-purpose, ultra-sensitive analyzer, for laboratory and industrial checking of electrical and electronic circuits. Has 28 practical scale ranges; measures d-c and a-c voltage, d-c and a-c current, and resistance. Accessories available to extend ranges. Compact and portable; furnished in either oak or steel case.

High Frequency Electronic Analyzer—Model 769

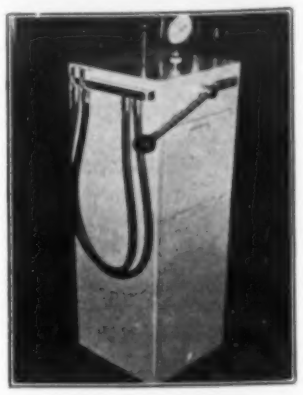
A three-in-one instrument providing a self-contained Volt-Ohm-Milliammeter, a high impedance electronic D-C Volt-Ohmmeter, and a probe type Vacuum Tube Voltmeter for use to 300 megacycles. Exceptionally stable and accurate. Has specially designed extremely small RF and D-C probes.

WESTON *Instruments*

If you write maker identify as IEN-4515

TESTING . . Hydrostatic machine detects leakage from small cavities

Source: PLANET PRODUCTS CORP.
6303-7 Warrick St., Cincinnati 27, Ohio



Designed to order

A hand pump, to develop pressure to 1,000 lb., is mounted in the rectangular housing of this new machine in connection with a pressure gage and hoses to apply in small castings and drilled passages in various work pieces. The pump draws hydraulic oil from a 5-gal. reservoir. The hoses are normally ring sealed by adapters designed to meet given requirements. A compartment is provided in the housing to store these adapters. A poppet type four-way valve is included in the assembly so a cavity can be evacuated as well as filled and pressurized by the new machine.

If you write maker identify as IEN-4516

RECTIFYING . . Miniature units, selenium type, 0.5 to 25 ma. ratings

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Non-expendable component unit

Textolite tubes for normal conditions, hermetically sealed metal clad cylindrical housings to meet government requirements, are used to house selenium stacks in this new line of miniature rectifiers. Leads extend from the housing ends in standard design. Diameters are a little under ⅛ to ½ inch.

Single stack rating, at 35 deg. C., is 0.5 ma. dc., at 26 volts, to 25 ma. at 5,200 volts. Combinations can be made for higher ratings. Ambient range is minus 55 to plus 100 deg. C.

If you write maker identify as IEN-4517

COMMUNICATING . . Phone booth excludes noises from surrounding areas

Source: BURGESS-MANNING CO.
5968-72 Northwest Highway, Chicago 31, Ill.

Let him hammer

Scout designates new design in the company's line of sound absorbing telephone booths. It shields the user's head and shoulders, excludes outside noises to permit clear understandable conversation. The booth is suited for use in noisy plant departments, in engine rooms, railroad stations, subways, terminals.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

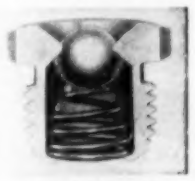
If you write maker identify as IEN-4518

A NEW UNIVERSAL DEVELOPMENT

Grease Fittings with Flush-Type Heads!

Where protruding heads of ordinary grease fittings are vulnerable to a heavy blow or collision, the new Universal Flush-Type Fittings stay put! This new streamlined design developed by Universal provides a smooth surface, which eliminates possible damage to the fittings and to the machine.

The most important feature of Universal Flush-Type Fittings is their exclusive ball-check construction. The seated ball, supported by a strong spring, prevents oil or grease leakage caused by back pressure. Because of special spring design, the ball cannot be unseated.



CROSS SECTION

Providing free flow of lubricant, the back-up spring in the Universal Flush-Type Fittings is designed so passage through it at the point of maximum depression is greater than the opening at the top of the fitting.

Learn more why these newly-developed Flush-Type Fittings belong on your machinery. They come in sizes from ⅜" to 1" threads. Write now for full details on the new Universal Flush-Type Fittings.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue • Oakmont, Pa.

If you write maker identify as IEN-4519

SPEED LOAD HANDLING for Truck, Shop or Machine

UNIT *utility* HOIST

Hydraulically operated Unit Utility Hoists can speed and ease handling of 1000 to 2000 lb. loads around your trucks, shop or machines, and the hoist itself can be switched from the truck, floor or machine mount in seconds. Three lifting points and boom extension give a wide working range. Hoist swings 360° on truck and locks securely in traveling position. Many uses in every plant.

Write today for latest information

UNIT MFG CO. 1221 Harmon Place, Minneapolis 3, Minnesota

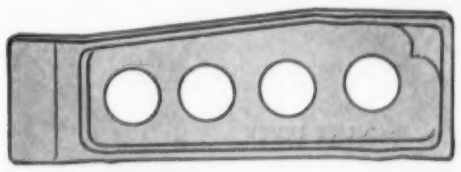
If you write maker identify as IEN-4520

MUELLER BRASS CO.

ALUMINUM FORGINGS

- STRONG AS STEEL BUT 1/3 THE WEIGHT.
- GOOD DIMENSIONAL STABILITY . . . MECHANICAL PROPERTIES RETAINED AT HIGH SPEEDS AND REASONABLE TEMPERATURES.
- REQUIRE LESS MACHINING AND FINISHING.
- FORGED TO YOUR SPECIFICATIONS.

MUELLER BRASS CO. • PORT HURON 26, MICHIGAN



102

If you write maker identify as IEN-4521

New XL BOND FOR CARBIDE TOOL AND CUTTER GRINDING

"XL" is Chicago Wheel's exclusive new bond for silicon carbide vitrified grinding wheels, especially made for grinding carbide cutting tools. Ideal for rough and finish grinding . . . offhand or precision automatic. Supplied in most popular sizes and steel backs. Prompt delivery. Keep your production up . . . costs down, with "XL."

Write today for information—Dept. N

CHICAGO WHEEL & *Mfg. Co.*
1101 West Monroe St., Chicago 7, Illinois
OFFICES IN PRINCIPAL INDUSTRIAL CENTERS

If you write maker identify as IEN - 4522

STURTEVANT ROTARY FINE CRUSHERS

Crush or Granulate to Fine, Even Sizes without Excess Dust...

Cross section view illustrating the crushing action.

These rugged crushers speed output of fines, cut reduction costs. Desired fineness is quickly obtained by regulating hand wheel. "Open-door" accessibility permits fast, easy cleaning. They crush fine . . . crush fast and do not clog. Available in output capacities from 1 to 30 tons-per-hour. Write for catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 24, MASS.

If you write maker identify as IEN - 4523

Get these BULLETINS...

Learn how these

RAYMOND

HYDRAULIC TRUCKS & TABLES
can cut costs, save time in your plant. Fill in and mail the coupon below for bulletins now!

***Lightweight* PALLET LIFT TRUCK**
Watch one man handle 2,000 lb. loads with this *Raymond* Pallet Truck! Hydraulic power does heavy lifting. Separate pedals for lifting and lowering—270° turning radius.

***Heavy Duty* PALLET LIFT TRUCK**
Handle heaviest loads with ease with this rugged *Raymond* Truck! It's fully hydraulic, has exclusive finger-tip lowering, 360° turning radius. 4,000 or 6,000 lb. capacities.

SKID LIFT TRUCK
Put this *Raymond* Truck to work handling skid loads! It's hydraulically operated, has exclusive finger-tip lowering, 360° turning radius. 2,500; 4,000 or 6,000 lb. capacities.

SHEET & STRIP FEEDING TABLE
Feed sheets faster at presses, cutting machines, forming equipment with this *Raymond* Table. Keeps material at correct working level. 2,000 to 20,000 lb. capacities.

***Portable* ELEVATING TABLE**
Use this *Raymond* Table for die handling, sheet feeding, work positioning or loading! Features 30" square top, 2,000 lb. capacity. Standard Model elevates from 28" to 44"—Telescopic Model, from 28" to 50".

HIGH LIFT TRUCK
Pick this *Raymond* Truck if you do die handling, loading, work positioning, ceiling maintenance!
It's a lift truck and tiering truck combined. Hand or electrically-driven hydraulic power unit, 60" or 108" elevated height. 1,000 lb. capacity.

GET THE FACTS

The RAYMOND CORPORATION
3512 Madison St., Greene, N.Y.

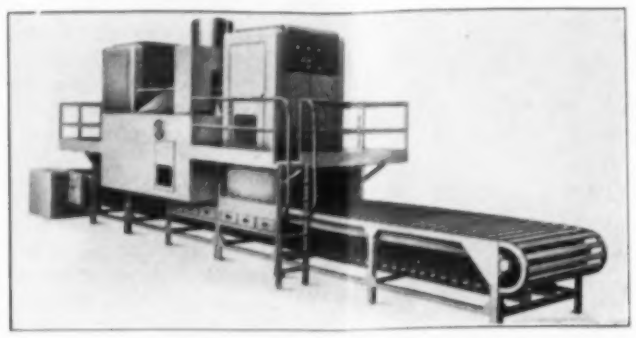
Please send me Bulletins describing: ☐ 2,000 lb. Pallet Truck; ☐ 4,000 lb. Pallet Truck; ☐ Skid Trucks; ☐ Portable Elevating Table; ☐ Sheet & Strip Feeding Table; ☐ High Lift Truck.

NAME_____ TITLE_____
COMPANY_____
STREET_____
CITY_____ STATE_____

If you write maker identify as IEN - 4525

DRYING . . High frequency equipment for foundry cores, 3,000 lb. per hour

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



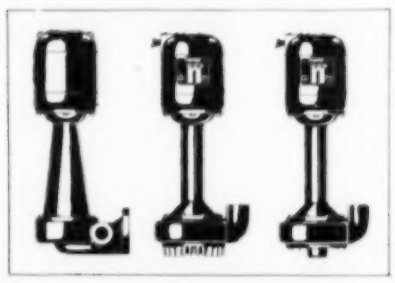
Preheated plates assist the cure

Metal plates ride a conveyor in this new Model 200-A Foundromatic drying equipment. They are preheated and loaded with green sand cores for movement through the dielectric field. The preheating eliminates any chance for chilling action between plates and cores. The equipment assembly mounts the company's 60-kw. dielectric generator. It will handle cores weighing to 800 pounds.

If you write maker identify as IEN - 4526

PUMPS . . Motor driven centrifugal for fluids containing abrasives, chips

Source: PIONEER PUMP
19655-59 John R St., Detroit 3, Mich.



Particularly for coolants

Model VBH, VD and VE are three new additions to the company's line of motor driven centrifugal pumps. The new units rate 1/20 to 5 hp. and will handle 148 gpm. of water on free flow. This decreases to 9 gpm. at 125-ft. head. Each pump is designed so the motor and supporting column and impeller can be withdrawn from the housing without disturbing the pipe connections.

The designs are intended to mount on the sides of equipment or tanks, in or on tank covers. Surge baffles prevent fluid from moving up along the motor shaft. The double vane impeller provides balance and efficient operation. The internal design assures self cleaning. Motor characteristics are subject to specification.

Identify as IEN - 4527

A signal circuit is closed to sound a warning when liquid flow rate changes in a tube line, following installation of the Revere Corporation flow switch. Alnico magnets in the mechanism force a pivoted aluminum vane toward closed-circuit position to actuate a mercury switch in the signal circuit when flow falls below a predetermined rate. The present design is characterized by light weight, compact design, as required in aircraft service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4528

DEZURIK *Easy Operating* VALVES
THEY DON'T LEAK!

WRITE FOR DETAILS

DEZURIK SHOWER CO.
SARTELL, MINNESOTA
MADE IN ENGLAND BY MILLSPAUGH, LTD., SHEFFIELD

If you write maker identify as IEN - 4529

MYSTIK BRAND TAPES · SELF-STIK

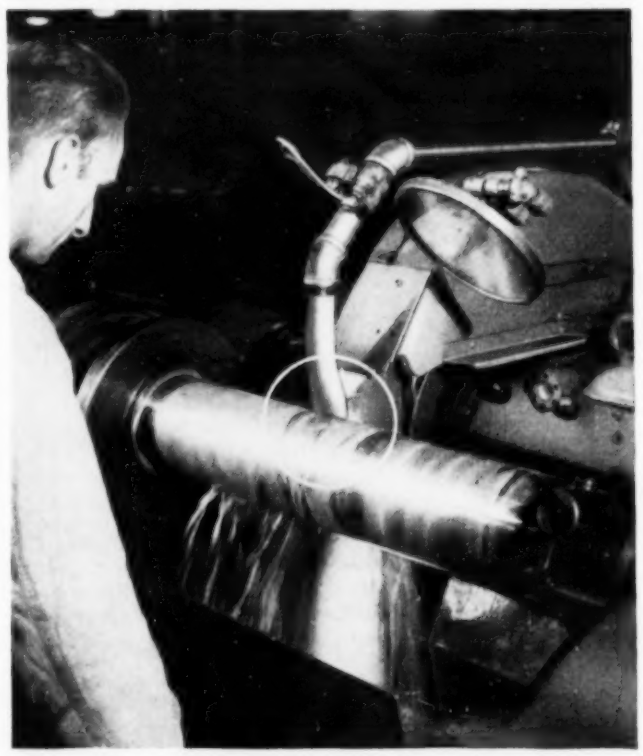
14 Colors!

To identify . . . code . . . decorate . . . trim

Self-Stik Mystik® Brand Cloth Waterproof Tapes are available in 14 colors . . . *white, black, red, green, blue, yellow, brown, wine, pink, tan, gray, light blue, light green* and *olive drab.* No other tape offers this range of colors to multiply the many uses in your operations. Takes the place of permanent painted stripes, decorations, on many products. Makes decorative hinges, bindings. Write for information and free samples. Mystik Adhesive Products, 2645 North Kildare Avenue, Chicago 39.

© Mystik Adhesive Products, 1962 Trademark Mystik Registered.

If you write maker identify as IEN - 4530



NOW...
Let the New Norton
G BOND
add the "TOUCH OF GOLD" to Your Grinding

After five years of development and field-testing, the Norton New G Bond — the most efficient vitrified bond ever produced — is ready!

Secret of its great superiority is the way it holds each abrasive grain just long enough for maximum cutting action — then lets go, to assure a constant grinding surface of new grains with fresh, sharp cutting edges.

As a result, Norton ALUNDUM* grinding wheels made with the new G Bond cut freer, cooler, faster . . . hold corners better . . . are better for form grinding . . . dress easier (ideal for crush dressing) . . . assure a smoother finish . . . cover a wider job range . . . and do more work per wheel.

ARRANGE WITH YOUR NORTON DISTRIBUTOR to try out one of the new Norton G Bond wheels. Ask him about the advantages that you can *see, hear,* and *prove* — and about how the new "Touch of Gold" means bigger grinding profits for *you.* Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

NORTON ABRASIVES

Making better products to make other products better

W-1478 *Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

If you write maker identify as IEN - 4532

Tube Talk — THE "HOW-TO" COLUMN

PROBLEM: Tubing for automatic electric immersion heaters, manufactured by The Still-Man Company, New York, N.Y., failed in forming operations. Finish was also poor, requiring additional work before shipment. These heaters are used in tanks holding chemicals, photographic solutions, drugs, water, electroplating solutions, etc.

SOLUTION: After trying a variety of alloys, The Still-Man Company selected corrosion-resisting Weldrawn 316 Stainless Steel tubing 3/8" O.D. x .032 wall, furnished by Superior Tube Company.

RESULT: Since using Superior Weldrawn Stainless Tubing, Still-Man has had negligible rejects due to bending and forming. Finish required no additional treatment. Production now standardized.

Suggestion—Write for information and literature today.

SUPERIOR TUBE COMPANY

2016 Germantown Ave., Norristown, Pa.

If you write maker identify as IEN - 4533

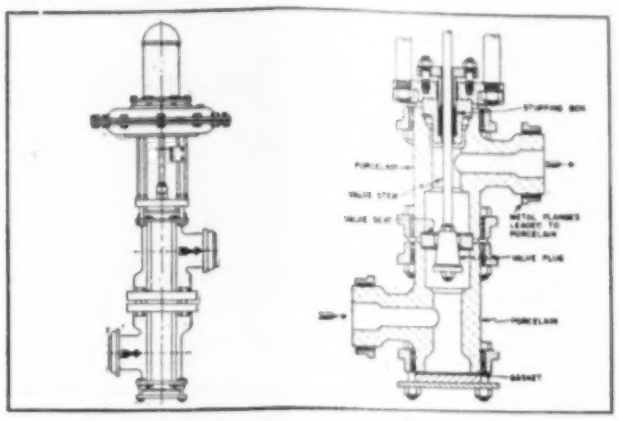
Newark Wire Cloth COMPANY

342 VERONA AVENUE • NEWARK 4, N. J.

If you write maker identify as IEN - 4535

VALVE . . Diaphragm operated, armored porcelain for corrosive fluids

Source: FISHER & PORTER CO.
771 Jacksonville Road, Hatboro, Pa.



Shut-off is bubble tight

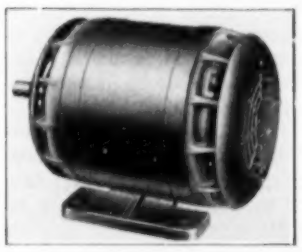
Valvrator porcelain valves are now available in armored construction in sizes from 1/4 to 2 inches. Layers of glass cloth are impregnated with corrosion resistant resins and wrapped on the porcelain body. The resulting physical properties approach those of steel. The armor will not prevent leakage in the event of cracking. It minimizes danger to plant and personnel. Operation is the same as in the original design. Overall height is somewhat greater, size for size.

The valve stem and plug are made normally of Hastelloy or tantalum except in the large sizes in which porcelain can be employed in the plug. The seat is normally porcelain but can be specified in Hastelloy or teflon insert design.

If you write maker identify as IEN - 4536

MOTOR . . Single and three phase, induction design, 1/6 to 5 hp. rating

Source: BALDOR ELECTRIC CO.
4351-55 Duncan Ave., St. Louis 10, Mo.



Ask for Bulletin 400

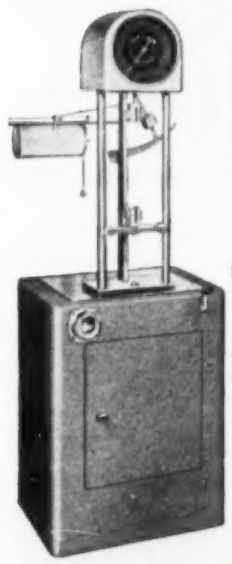
Aluminum is combined with special steel laminations and formed into the stator frame of this new Baltric motor. The combination of steel and aluminum forms a frame having the same thermal expansion as steel. The frame, copper winding and insulation form the complete stator. The squirrel cage rotor is made of cast aluminum with integral cooling vanes. The end frames are cast iron and in them are mounted factory lubricated sealed ball bearings. Two exterior aluminum fans mount on the motor shaft between the end frames and outer steel guards to pass cooling air over the motor.

Three ratings are 1/6 to 1/3 hp. in single-phase, horizontal open construction for operation on 110/220-volt 60-cycle ac. in reversible duty on 40-deg. C. temperature rise. Three additional sizes are 1/3 to 3/4 hp. in enclosed construction for 55-deg. C. temperature rise. Seven sizes range from 1/2 to 5 hp. in three-phase design for operation on 220/440-volt ac. on continuous duty at 55-deg. C. temperature rise. List price over the range is $25.40 to $137.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4537

small COMPACT TESTER — large ACCURATE RANGE



DILLON

multi-low-range universal TESTER

A portable laboratory instrument that is accurate to 1/2 of 1%. Tests paper, thread, fabrics, plastics, springs, film, cord, wire, leather, resins, adhesives, glass, wood, ceramics, felt, cardboard, bakelite, insulation and any other materials which fall within its range. Has 5 scales: 0-10, 0-25, 0-50, 0-100 or 0-300 lbs.

Stress-strain curve automatically recorded on graph sheets. Limit switch prevents overrun. Indicates load as it is applied. Accessories permit transverse, tensile, compression and shear testing easily and economically. Speeds from 0" to 20" per minute. The ultimate in fine testing equipment yet low in cost.

Write or wire for illustrated bulletin —Today

W. C. DILLON & CO., INC.

14620K Keswick Street • Van Nuys (Suburb of Los Angeles), Calif.

If you write maker identify as IEN - 4538

TO GEAR MANUFACTURERS *Exclusively*

if you produce precision gears of 6" outside diameter or less your files should certainly contain full data on the HAMILTON® Precision Gear Hobber, the machine of exclusive extras.

EXTRA — Hob spindle speeds.

EXTRA — Hob spindle speed ranges.

EXTRA — Accuracy of work and hob spindles (to within .0002").

EXTRA — Rigidity, for maintenance of accuracy.

EXTRA — *Independent* selection of speed, feed, indexing.

EXTRA — Maximum accumulative error of .0002".

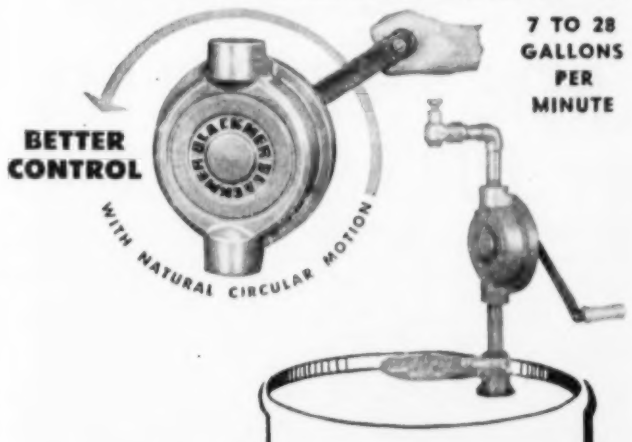
EXTRA — Speedy set-up and operation, extra flexibility.

Get the complete story. Write for FREE Bulletin GH-5312.

THE Hamilton TOOL COMPANY

905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN - 4539



BLACKMER LIQUID MATERIALS HANDLING

HAND PUMPS

for clean, fast liquid handling from drums

WRITE FOR CATALOG AND PRICES

BLACKMER PUMP CO. GRAND RAPIDS MICHIGAN

If you write maker identify as IEN - 4540

Like hundreds of other industrial plants, Morrison Products Company has discovered that "Bear" Dy-Namic Balancing Machines attain high standards of accuracy at favorable production rates and with minimum capital investment. Reduce noise, vibration, friction, bearing failure thru Dy-Namic Balancing. **FREE MANUAL** shows how! Write: Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

"BEAR" STATIC AND *DY-NAMIC BALANCING* MACHINES

balance rotating parts weighing from 4 oz. to 8 tons

If you write maker identify as IEN-4541

Jenkins cast steel Valves

. . . for dependable economy in higher pressure — higher temperature services

Mounting pressure and temperatures in power generation and industrial processing call for Cast Steel Valves. Jenkins offers a wide selection of patterns that have met the test of industry's toughest services.

In these valves — through special refinements in design to increase service life and assure long, trouble-free performance — Jenkins provides a wide margin of strength and safety beyond ratings. Their efficiency and low maintenance records measure up to the high standards established for *all* valves developed by Jenkins Valve *specialists*.

Ask your distributor for the new Jenkins Cast Steel Valve Catalog or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS TRADE JENKINS MARK DIAMOND MARK

JENKINS Jenkins Bros. SINCE 1864 **VALVES**

If you write maker identify as IEN-4542

NEW . . . ENGINEERED FOR PAINTING!

GPX GREEN

PLASTIC-FACED PLYWOOD

Completely new and especially designed to make painting faster and easier, GPX GREEN offers you the finest painting surface obtainable. Here are the features which will save time and money for you:

1. Can't crack or check.
2. Reduces grain raise.
3. Can be covered with one coat.
4. Makes paint last up to 3 times longer.
5. Smoother, needs no sanding.
6. Maximum bending.
7. All-purpose for interior or exterior use.

GPX GREEN will cut your maintenance costs, speed your manufacturing operations. This plastic-faced plywood is the ideal material for Exterior and Interior Sidewalls, Cabinets and Built-Ins, Children's Furniture and Toys, House Trailers, Displays and Fixtures, Outdoor Signs and wherever a smooth paint surface is desired. Write today for further information.

GEORGIA—PACIFIC
PLYWOOD COMPANY
614-A2 North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Baltimore, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Fort Worth, Lancaster, Los Angeles, Louisville, Memphis, Nashville, Newark, New Castle, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

For complete data, fill in and mail this coupon *today*

Georgia-Pacific Plywood Company
Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.

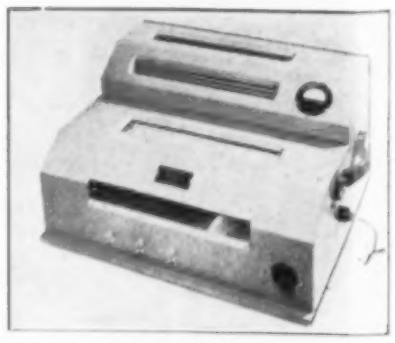
Please send me Free Technical Data Manual on GPX GREEN plastic-faced plywood.

NAME.....
FIRM NAME.....
.....
FIRM ADDRESS.....
CITY.....STATE.....
POSITION.....

If you write maker identify as IEN-4544

PRINTING . . Photocopy equipment exposes, develops, dries and delivers

Source: GENERAL PHOTO PRODUCTS CO.
253 General Photo Bldg., Chatham, N. J.



No darkroom needed

New design is now available in the company's Exact-Photo-Copy equipment, previously described IEN-13879-52. The machine takes sheets to 15 in. in width and to any length. It will produce 60 to 90 letter size copies per hour at a cost of about 8 cents each.

Material to be copied is inserted into the slot in the exposure section with a sheet of No. 1 sensitized paper. It feeds through this section by motor drive in about eight seconds. The two sheets are removed, the No. 1 exposed paper is faced to a piece of No. 2 transfer paper and both are inserted in the processing section.

The two emerge in about 15 sec. and are peeled apart to provide an exact duplicate of the original ready to use. The interior of the processing unit is constructed of stainless steel which is not subject to attack by the developing fluid. The new machine lists at $325. Operation is on 110-volt ac.

If you write maker identify as IEN-4545

DRILLING . . Production machine, hand feed design, 1 to 4 spindles

Source: SOUTH BEND LATHE WORKS
301 E. Madison St., South Bend 22, Ind.

Also taps, reams, burrs

New assembly of the company's 14-in. precision drilling machine is now available in one to four-spindle combinations for floor or bench mounting. A single spindle unit is equipped with a work table measuring 14 by 15 inches. The four-spindle assembly has a 14 by 55-in. table. In all cases throat dimension is 7 in. from the spindle to the column face and maximum clearance is 18 in. between the chuck and table work surface.

The head is mounted on a circular section column. It is equipped with a clamp and screw adjustment in which the clamp can be secured to the column and the head moved through a 4-in. distance by turning a crank. The machine takes a ⅓ or ½-hp. motor. Spindle speeds range from about 720 to 4,325 rpm. through a pair of step sheaves.

Identify as IEN-4546

For $22.50 or $45, depending on size, you can purchase a torch that burns liquid petroleum gas to burn up weeds where they grow, to melt tar, preheat, thaw, heat metals for bending, descale. Length is about 40 and 46 inches. Weight is 3 and 5 pounds. Maker is Weldit Inc.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4547

MAKES TOUGH TASKS EASY

'Tugit' does exactly that. It is a compact, portable tool — ideal for close-quarter lifting and pulling at any angle. Light but ruggedly built, it has all the easy, fast action of a spur-geared hoist. Every feature has been provided to assure complete safety.

To maintain plant equipment, to lay pipe or slide freight doors, to stretch cable or wire fencing, to pull posts or uproot stumps—whatever the job, 'Tugit' saves time and energy. Accurate spotting is easy. One-ton loads can be moved as little as 3/32" at a time, with a lever pull of only 40 lbs.

'Tugit' is a tool-box-size hoist made in 1 and 2-ton capacities. It's so handy, new jobs turn up for it every day. Learn all about versatile 'Tugit' from your "Shaw-Box" Distributor or write for Bulletin 388.

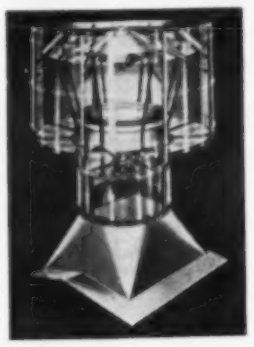
'TUGIT'® HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and 'Load Lifter' Cranes. 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, and 'American' Industrial Instruments.

If you write maker identify as IEN-4548

It Ventilates by GRAVITY



and Ventilates by POWER

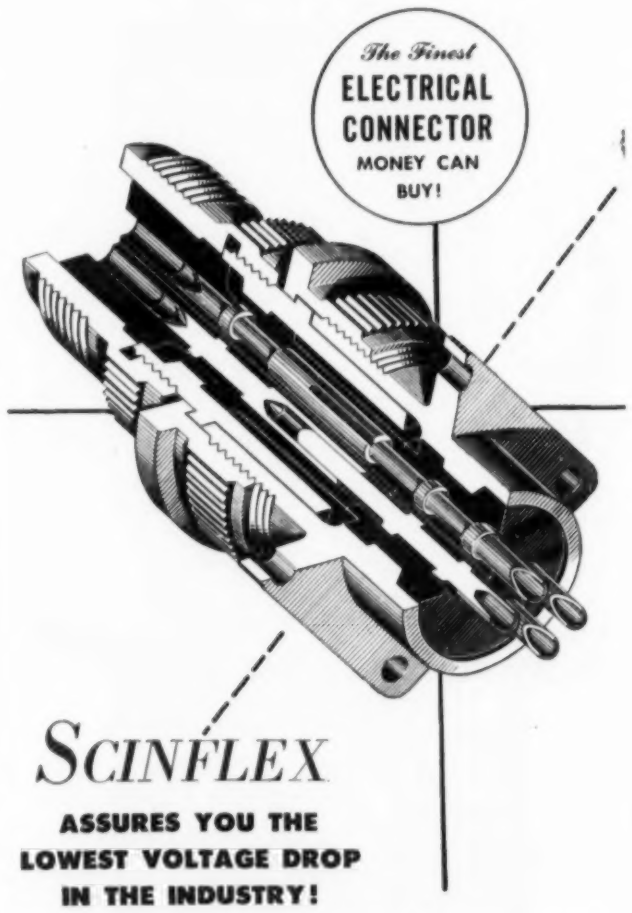
ENJOY ECONOMICAL TWO-WAY VENTILATION WITH BURT FREE-FLOW FAN VENTILATORS

Many structures do not require full time power ventilation. For them, Burt's Free-Flow Fan Ventilator is both economical and efficient because it supplies all normal exhaust needs by gravity. But, when greater exhaust is required, its Axial Flow Burt Airfoil Fan accelerates almost six times the removal of extra heat and impurities. It provides positive controlled ventilation. See Sweet's for further details or write for Bulletin SPV-10A.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 S. High St., Akron 11, Ohio

If you write maker identify as IEN-4549



ASSURES YOU THE LOWEST VOLTAGE DROP IN THE INDUSTRY!

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX
ELECTRICAL CONNECTORS

Bendix

SCINTILLA MAGNETO DIVISION of
SIDNEY, NEW YORK

Bendix AVIATION CORPORATION

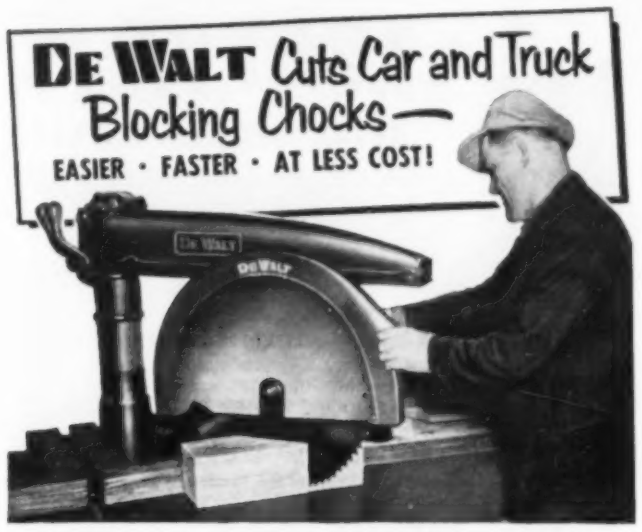
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

FACTORY BRANCH OFFICES: 118 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brouwer Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

If you write maker identify as IEN-4551

DE WALT Cuts Car and Truck Blocking Chocks—

EASIER · FASTER · AT LESS COST!



De Walt® brings unbelievable ease, speed and economy to your blocking operations!

One lumber yard owns a 7½ H.P. De Walt that cuts 6" x 6" car blocking chocks for 8 hours a day!

It makes 1,000 such cuts before it needs sharpening! A band saw blade needs sharpening after only 200 cuts.

Investigate De Walt—the profitable answer to your blocking problems... as well as *all* your wood cutting problems. Send for catalog to De Walt Inc., Dept. IEN-4, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DE WALT

POWER SAWS

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN-4552

the standard of accuracy...

BOWSER XACTO

...the World's most widely used meters!

For over a quarter century Xacto meters have brought to industry after industry an entirely new and effective way to measure liquids accurately and dependably.

•

Xacto meters accurately measure and safely handle more than 662 different liquids in processing, blending, packaging and many other operations.

•

There is no substitute for Bowser Xacto meters for checking incoming deliveries, transferring, batching or recording consumption.

•

BOWSER, INC. 1338 CREIGHTON AVENUE FORT WAYNE 2, INDIANA

BOWSER

REGIONAL OFFICES

Atlanta · Chicago · Cleveland · Dallas · Kansas City

New York · San Francisco · Washington, D. C. · Hamilton, Ont.

If you write maker identify as IEN-4554

POLISHING . . Motor driven machine, mounts 96-inch double end spindle

Source: HAMMOND MACHINERY BUILDERS INC.
1607 Douglas Ave., Kalamazoo, Mich.

Control centers at dial

Model 10-VRO is a new polishing and buffing machine with a belt-connected 10-hp. 1,750-rpm. motor. The drive includes a variable pitch sheave by which speed at the spindle can be set between 1,500 and 3,000 rpm. overall.

The spindle is mounted in four bearings and measures 69 in. overall. Distance between wheels is 56 inches. The machine takes buffs or contact wheels to 4 in. in face width and from 12 to 16 in. in diameter. Distance from the floor to the spindle center line is 38 inches. Floor space measures 69 by 39 inches. The machine weighs about 1,500 pounds.

If you write maker identify as IEN-4555

WELDING . . AC. arc machine adjusts between 40 and 500 amperes

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

For general utility use

Type WK40K is further development of the company's single-phase ac. arc welding machine, previously described IEN-2746-53. It extends the top capacity from 375 to 500 amperes. It is suited for repair and construction work. Assembly includes arc stabilizing capacitors to assist in striking and holding the arc, a range switch to select 40 to 140 amp. capacity or 140 to 500 amperes. Overall dimensions are about 23 by 44 inches. Weight is 355 pounds.

If you write maker identify as IEN-4556

WASHROOMS . . Plastic dispenser holds visible supply of powdered soap

Source: HONEYCUTT MFG. CO.
2713-19 Oak St., Dept. S, Kansas City 8, Mo.

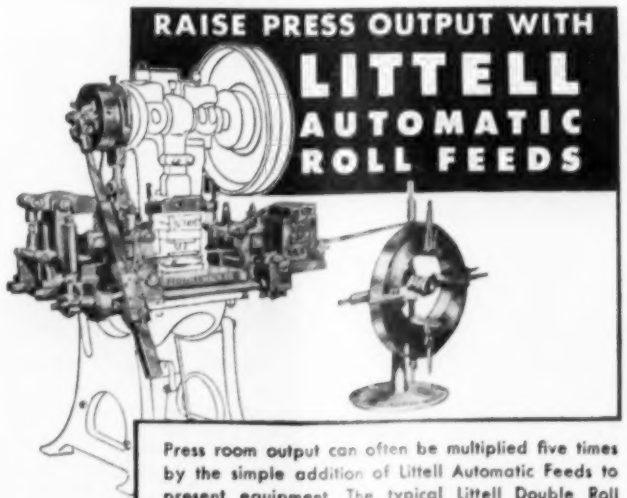
Holds 36 ounces

Powdered soap is filled through a screen into the plastic housing of this new Clear-view dispenser. It is dispensed in measured amount when a worker presses upward on the actuating ring at the bottom. The soap is delivered, without scattering, into the worker's hand. A separate cast mounting back is part of the assembly. A lock can be turned to prevent or permit operation. The unit measures 12 in. in height by 3¾ in. in width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4557

RAISE PRESS OUTPUT WITH LITTELL AUTOMATIC ROLL FEEDS



Installed on old or new equipment

Press room output can often be multiplied five times by the simple addition of Littell Automatic Feeds to present equipment. The typical Littell Double Roll Feed shown here grips the stock on both sides of the die to assure maximum traction and feeding power. Stock is easier to start and finish in progressive die work. No hand feeding at either end of the stock. Rack and pinion drive provides the smoothness and the gradual acceleration and deceleration of feed rolls for a truly accurate feed. Standard Littell Automatic Feeds serve all types and sizes of presses, all standard widths and thicknesses of stock.

Write for catalog

F. J. LITTELL MACHINE CO.

Speed with Safety

ROLL FEEDS • DIAL FEEDS
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

WHEN YOU BUY FROM LITTELL . . . YOU PURCHASE A PACKAGE OF SATISFACTION

If you write maker identify as IEN-4558

Smoother operation, cleaner packages for large soap firms

● When fabric conveyor belts were used to convey detergents through filling operation, the resulting spillage tended to build up, causing belt to stretch and slip and bottom of package to smear. Now that a Cyclone Spiral Woven Belt is being used, the wide-open mesh of the belt allows all fallen particles to fall through the belt. The packages stay clean and free from objectionable smearing.

In the Cyclone Conveyor Belt Catalog is complete information on all types of belts. Write to Cyclone Fence, Dept. C-43, Waukegan, Illinois for a free copy.

U·S·S CYCLONE METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION, WAUKEGAN, ILLINOIS

USS

UNITED STATES STEEL

If you write maker identify as IEN-4559

ILLINOIS GLOVES...

JOB-ENGINEERED

to the Nth degree!

Precision-engineered for your job, tested in laboratories, proved on production lines! That's Illinois . . the glove with built-in safety, longer life, better fit!

RECONDITIONING WORK GLOVES saves money! Illinois gloves are made strong, take reconditioning in stride, come out better than new! Write for information!

ILLINOIS GLOVE CO.
Sales Office: 1401 Fairfax Trafficway Bldg. D, Kansas City, Kansas

Send for catalog! If you can't find the all-leather glove you need in Illinois' complete line, write . . . we'll develop specials for you!

ILLINOIS GLOVE CO. CHAMPAIGN, PANA, EFFINGHAM

If you write maker identify as IEN-4560

HOLD LABELS *SECURELY!* . . TO TIN, METAL, GLASS

Grip-Tight is ideal for food, chemical, paint cans

GRIP-TIGHT Label Paste, the time tested resin emulsion paste, for hand brushing, definitely holds paper labels smoothly, easily, permanently to hundreds of surfaces and materials including: tin cans, metal pails, steel drums, lacquered, painted, varnished surfaces, glass bottles, metal parts, etc.

Use it for attaching product labels, instruction and caution labels, Express Waybills, circuit diagrams . . this *ONE* adhesive may do all your labeling work.

Fill in coupon for further details or send for trial shipment today.

MAIL THIS COUPON TODAY!

Gentlemen: Please ship F.O.B. Chicago or New York, the following trial order ON APPROVAL. Invoice to be cancelled if merchandise not satisfactory.

. . . . Quart Jars Grip-Tight at $1.15 ea.
. . . . Gallon Jars Grip-Tight at $3.40 ea.
☐ Send Technical Bulletin describing Grip-Tight and complete price schedule.

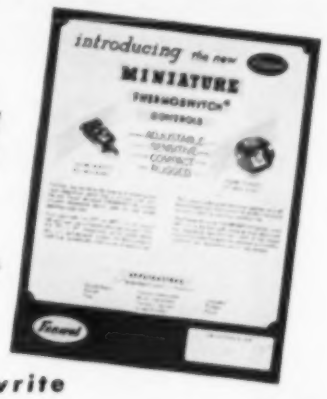
Name _____
Address _____
City _____ State _____

PAISLEY PRODUCTS INCORPORATED
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products
1770 CANALPORT AVE., CHICAGO 16, ILL. ★ 638 W. 51st STREET, NEW YORK 19, N. Y.

If you write maker identify as IEN - 4561

Bulletin Now Ready

on new Fenwal Miniature THERMOSWITCH® Controls



No charge . . . just write

If your product or project calls for temperature control that is exact and reliable but space saving is an important consideration, you will want to know more about the new Fenwal Miniature THERMOSWITCH unit. It incorporates in a small temperature control many characteristics previously found only in much larger controls.

This dependable little device can be adjusted anywhere within the range of 0°F to 200°F. It is extremely sensitive to temperature variations and positive in action . . . maintains normal control characteristics under vibrations of up to 5 G's . . . is as rugged as it is tiny. It lends itself perfectly to electrical, electronic, radio, radar and other protective uses where space is at a premium.

For complete information on the new Fenwal unit, send for your FREE copy of the Miniature THERMOSWITCH control bulletin. **Write Fenwal Incorporated, 74 Pleasant St., Ashland, Mass.**

Fenwal **THERMOSWITCH®**
Electric Temperature Control and Detection Devices
SENSITIVE...*but only to heat*

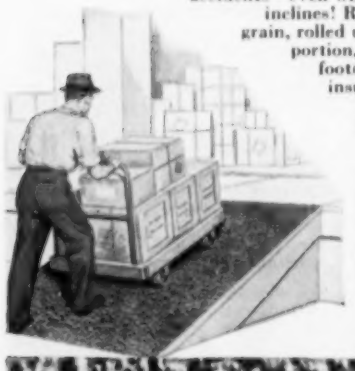
If you write maker identify as IEN - 4562

If you write maker identify as IEN - 4563

THIS NON-SLIP FLOOR PLATE PAYS FOR ITSELF IN LOWER INSURANCE RATES!

DOWN go accident rates *and* insurance premiums when you install A.W. ALGRIP Abrasive Rolled Steel Floor Plate. In plant after plant, ALGRIP has ended slipping accidents—even when wet or oily—even on steep inclines! Rough, tough "grinding-wheel" grain, rolled uniformly into ALGRIP's upper portion, puts non-skid safety in every footstep. And resultant savings on insurance premiums pay for your ALGRIP installation.

Learn the full story of *savings from safety* today. Send for the facts about tough, fire-and-breakage-resistant, non-slip ALGRIP Safety Floor Plate. The handy coupon brings you our new Booklet on accident prevention.



A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

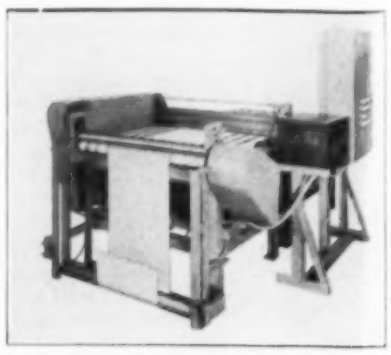
I want to know more about savings from safety. Send me your ALGRIP Booklet AL-5.

*Name*_____
*Company*_____
*Address*_____
*City*_____ *Zone*_____ *State*_____

If you write maker identify as IEN - 4564

SHEARING . . Power drive machine for fabrics, rubber, plastics, paper

Source: HOBBS MFG. CO.
46 Salisbury St., Dept. IEN-1, Worcester 5, Mass.



For non-metallic materials

Precision length controls and a new slitting attachment are now available on the company's Jacques power shear, previously described IEN-10178-50. Width capacity remains the same at 50 inches. Cut length can be any desired amount. Speed is to 70 strokes per minute. Several thicknesses can be fed at one time, in connection with an end gage, when operating on thin sheet or roll materials. The machine is available for manual, semi-automatic or automatic operation with work speed at 10 to 100 fpm., depending on length of cut. It is suited particularly to cut soft materials as they issue from an extruding operation.

The basic machine, equipped with hand feed, lists at about $2,500. This list is $4,000 when automatic feeding equipment is employed to handle work from a roll and cut to length against a gage. The automatic machine with electric counters, conveyor feed and take-away tables will list at about $8,000, plus engineering charges, if it is to be fitted into a production line under special conditions.

If you write maker identify as IEN - 4565

TRUCK . . Load clamp attachment prevents spilling a load in transit

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio

Presses down on load

Load Stabilizer is a new hydraulically operated plate that applies with a power cylinder and a pair of telescoping guides above the forks on the company's lift trucks. It is operated for movement up and down, in a range between 41½ and 75 in. above the forks, by a control valve on the right hand side of the operator's seated position.

Clamping pressure is adjustable between 150 and 1,350 lb. on a load that is to be securely held for travel from one location to another. Relief valve prevents exceeding set pressure.

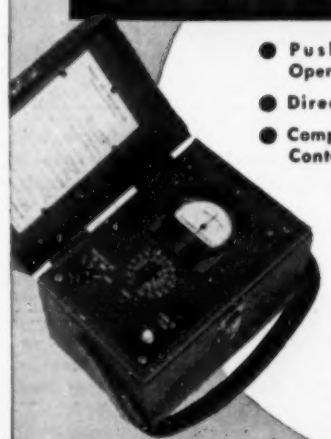
Identify as IEN - 4566

Name plates, diagrams, drawings, dials, any flat work to 26 by 44 in., can be laminated between transparent plastic sheets at Leathertone Incorporated. The back sheet can be opaque instead of transparent if you want it that way. You send your work to be laminated to the company.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4567

Simple • Accurate
GROUND RESISTANCE TESTING
with
VIBROGROUND



- Push-Button Operation
- Direct-Reading
- Completely Self-Contained
- True readings, regardless of earth resistance and condition, stray frequencies, voltages or currents

YOU can be sure of safe, effective grounding of all types of electrical systems when you test with the light, easy-to-use Vibroground. Simple operation and built-in accuracy virtually eliminate reading errors. No leveling, cranking or outside power source is necessary; and direct readings are independent of auxiliary probe resistance.

Full data on Vibrogrounds, including testing techniques and illustrations, is yours for the asking.

Write for BULLETIN 105

ASSOCIATED RESEARCH, Incorporated
"Precision Instruments Since 1936"
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as IEN - 4568

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS
. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT
. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE
. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE
. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN - 4569

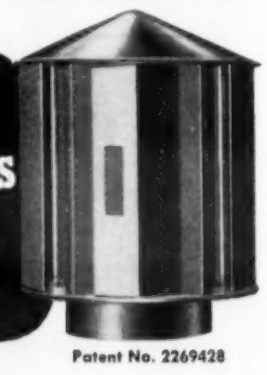
BUYING VENTILATORS? GET THE FACTS FIRST...

Ask for CERTIFIED Ratings... It's the only way you can be sure ventilator performance will measure up to the ratings claimed for it.

Ask for Ratings Based on VARIABLE Wind Conditions... if you want a ventilator that performs efficiently under *all* wind conditions. Ratings of most ventilators are based on *horizontal* wind tests only, or tests made at favorable angles. Many ventilators down-draft at other angles.

Breidert Air-X-Hausters

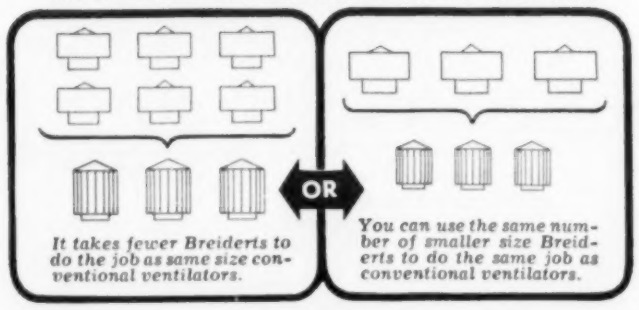
PROVIDE SAFE, SURE VENTILATION NO MATTER WHICH WAY THE WIND BLOWS...



Patent No. 2269428

Certified tests show that the actual capacities of Breidert Air-X-Hausters are greater than published ratings (barring interior negative pressures). Stationary, no moving parts, nothing to jam or get out of order. *The Breidert is the pioneer ventilator* to publish certified ratings based on tests* made with wind blowing in all directions.

The Breidert Delivers Better Results at Minimum Cost



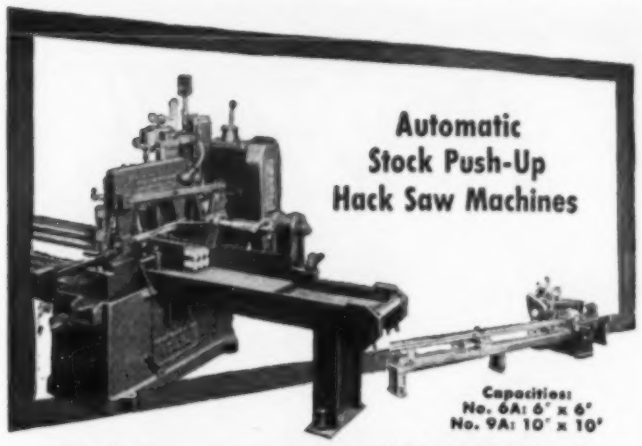
Get *all* the facts! Write today for complete Engineering Data Book, including certified capacity ratings. Address Dept. C.

✔ Every businessman should read "Plain Facts and Simple Figures," written by G. C. Breidert. This thought-provoking article pertains to the problems of every American businessman. The first twenty lines will open your eyes! Write for a free copy.

THE G. C. BREIDERT CO.
3129 San Fernando Road, Los Angeles 65, Calif.
Representatives in principal cities throughout the U. S.

**By Pittsburgh Testing Laboratories*

If you write maker identify as IEN - 4571



Feed, Measure, Cut-Off—AUTOMATICALLY

These automatic stock push-up hack saw machines are not new. MARVEL built the first practical bar feed hack saw machines, over 30 years ago. The sound, proven, basic principle of these machines has never changed—but they have been constantly improved and refined. Today they are still the leaders—the most practical, fastest, most accurate, most productive cutting hack saw machines built. No matter what your cut-off work, let us recommend the MARVEL saw that will give you true economy, speed and accuracy at an attractive price.

Write for Catalog

MARVEL *Metal Cutting* **SAWS**
Better Machines-Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

If you write maker identify as IEN - 4572

The Simpson Model 260 Volt-Ohm-Milliammeter Outsells All Others Combined Because

- **A** covers all ranges necessary for Radio and TV set testing
- **B** includes the Simpson 50 Microampere Meter Movement known the world over for its ruggedness
- **C** no bulky harness wiring, thus eliminating all intercircuit leakage at this high sensitivity
- **D** molded recesses for resistors, batteries, etc.
- **E** easy battery replacement
- **F** covered resistors to prevent shorts and protect against dust and moisture

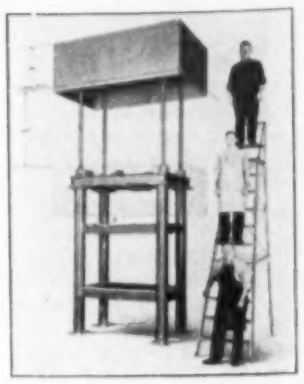
● **All components—including case and panels—are specially designed and completely tooled for maximum utility . . . not merely assembled from stock parts**

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44, Illinois • Phone: COlumbus 1-1221
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN - 4574

ELEVATOR . . Motor operated for delivery end of sheeting machine

Source: HAMILTON TOOL CO.
905 Hanover St., Hamilton, Ohio



4 by 7 foot platform

A skid is placed on the platform of this new 3-ton Portelvator to be raised to a maximum 30 in. above floor level at the delivery end of a paper sheeting machine. The platform is lowered gradually, by bushbutton operation of the 2-hp. motor, as the load accumulates, until the elevation is 48 in. below floor level. Then the sheeting machine is stopped until the load can be raised for removal by a fork truck and a new skid placed on the platform. The elevator mounts on a basement floor in the installation for which it was built by the company.

If you write maker identify as IEN - 4575

SOLDERING . . Combined solder and flux in stable powdered form

Source: FARRELLOY CO.
1249 N. 26th St., Philadelphia 21, Pa.

2½ lb. tins list at $3.75

Fas-Tin is a new combination of flux and powdered solder for application on jobs normally difficult to complete satisfactorily. Copper pipe and sweat fittings can be assembled without pre-cleaning. Bearings can be tinned even though they are impregnated with oil. Stainless steel parts can be joined, as well as dissimilar metals, except aluminum.

The powder will not cake or lump on exposure to the air. The metal remains in uniform suspension. There is no deterioration or free mineral acid to cause corrosion. Coverage is about 25 sq. ft. per pound.

If you write maker identify as IEN - 4576

STAPLING . . Air operated tool drives and clinches staples in cartons

Source: BOSTITCH INC.
1008 Mechanic St., Westerly, R. I.

Model CAD

Operation is on 80 to 90-lb. air pressure for this new production line stapling tool. It drives a staple each time the operator depresses a trigger control. It will drive 120 staples per min. Carton closing speed is limited only by the operator's ability to position the tool and press the trigger. The magazine holds about 100 staples, ½ in. in width by ⅜ or ½ in. in leg length. Overall length of the tool is 14 inches. Weight is 9 pounds. List price is $125.

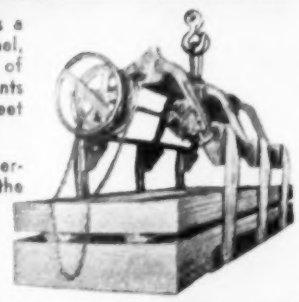
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4577

Wide *or* Narrow...

1 C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.



Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin SL-28 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 4578

BECKER CO_2-POWERED SPRAY GUN

NO COMPRESSOR • NO HOSES
NO ELECTRICAL OUTLETS

USE IT ANYWHERE!

Here's a completely portable sprayer especially designed for the hundreds of industrial uses where costly, cumbersome compressor-type spraying is unnecessary. Sprays paints, oils, varnishes, water-proofing, fire-proofing, etc. Powerful CO_2 cartridge sprays up to one 21 oz. containerful at high pressure. Light in weight for easier spraying. Has brass and stainless inserts, heavy-gauge steel container, comfortable knurled handle grip, and cast aluminum head.

SEE YOUR DISTRIBUTOR or order direct postpaid. Extra CO_2 cartridges at your dealer's or 10 for $1 postpaid.

SULLIVAN-BECKER CO., Dept. 193-D, Kenosha, Wisconsin

If you write maker identify as IEN - 4579

To get better prints ... faster

Tapco Plant, Thompson Products, Inc., uses Kodagraph Autopositive intermediates in print production.

The Tapco Plant knows full well that illegible shop prints pave the way for costly reading errors; knows, too, that Kodagraph Autopositive intermediates are low-cost insurance against such a possibility.

It therefore reproduces its more critical and complex jet and valve drawings on Kodagraph Autopositive Paper Translucent and thus obtains—quickly and easily—sparkling "masters" for print making which have dense photographic black lines on an evenly translucent, premium-quality paper base; *which* will produce highly legible whiteprints time after time at *stepped-up* machine speeds.

Extremely fine-detailed drawings are reproduced on Kodagraph Autopositive Film, which captures the faintest detail . . . keeps close lines from "filling in" . . . and produces top-quality photographic intermediates with extremely fast print-back speeds.

No negative step . . . no darkroom handling. Kodagraph Autopositive Paper and Film are handled in exactly the same manner . . . produce positive photographic intermediates *directly*. First, they are exposed in one of the Tapco Plant's direct-process machines—or in a photocopy unit. Then, they receive standard photographic processing. A fast, convenient room-light operation all the way. And no new equipment needed.

Write today for a free copy of "Modern Drawing and Document Reproduction." It gives complete details on the revolutionary line of Kodagraph Reproduction Materials, which you, or your local blueprinter, can process conveniently, economically.

Kodagraph Autopositive Materials

"THE BIG NEW PLUS" in Engineering Drawing Reproduction

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 4581

Lindberg Air or Hydraulic Cylinders provide dependable, low cost power for lifting, forcing, pulling, pressing, pushing and clamping. Ask for bulletin No. 701, "Lindberg Hydraulic Cylinders" . . or No. 731, "Lindberg Air Cylinders."

LINDBERG CYLINDERS AIR•HYDRAULIC

Lindberg Engineering Company, 2481 W. Hubbard St., Chicago 12, Ill.

If you write maker identify as IEN - 4582

The Completely New, Low-Cost OSTER ELECTRIC "SEWER MASTER"

It's Powerful! It's Versatile!
It's a necessity for Maintenance Departments!

The all new Oster "Sewer Master" is a powerful, low-cost machine. It weighs less than 100 lbs. and clears obstructions 100 ft. or more from the sewer entrance. Large, rubber tired wheels make it easy to move up and down stairs and to the job.

Cutting tools to remove roots, grease, chips and many other obstructions are easily attached to the coiled spring "snake" which is securely held and revolved at any convenient distance from the sewer entrance by the revolving chuck jaws of the "Sewer Master".

A snap switch reverses the powerful motor on the new Oster "Sewer Master" so the "snake" can be revolved in either direction to assure easiest removal of toughest obstructions. Complete control of the "snake" action is maintained through the convenient control lever.

THE OSTER MANUFACTURING COMPANY
2053 East 61st Street • Cleveland 3, Ohio

Send me full facts on the New Oster "Sewer Master".

Name_____

Company_____

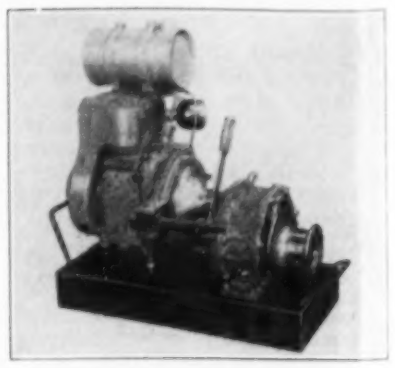
Address_____

1893 - CELEBRATING 60 Years Leadership in the Threading Industry - 1953

If you write maker identify as IEN - 4584

WINCH . . Portable, engine driven for construction and maintenance use

Source: ST. ANTHONY MACHINE PRODUCTS CO.
2426 E. Franklin Ave., Dept. KP, Minneapolis 6, Minn.



Can be motor driven

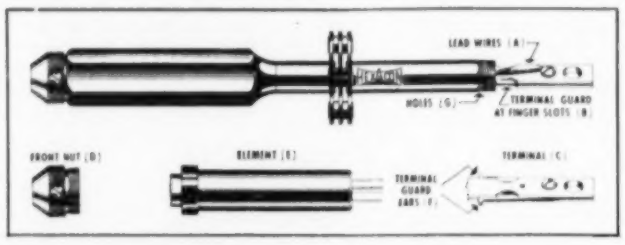
Gypsiwinch is a new engine driven portable assembly consisting of a gasoline engine, lever operated brake, geared transmission and capstan head, all mounted on a base equipped with a pair of carrying handles. Several standard models mount air cooled engines rating ¾ to 7½ hp. The capstan permits an operator to spot a load and to "slip" his line by varying his pull on it while the capstan is rotating steadily.

A heavy load can be picked up gradually and set down in the same manner. A drum to wind up wire rope is available to specification. Motor driven assemblies also can be specified. Base dimensions range from 12 by 32 in. to 12 by 42 inches.

If you write maker identify as IEN - 4585

SOLDERING . . Electric iron designed for quick element replacement

Source: HEXACON ELECTRIC CO.
155 W. Clay Ave., Roselle Park, N. J.



Back in service in less than a minute

Spring fingers on the terminal block at the rear end of this new electric soldering iron hold the block in place and permit its quick removal. It is not necessary to fish the element lead wires around the terminal. A new brass sheath on the element assists in quick repair and prevents damage to resistance wire and mica when the element is being replaced in the housing. A slot in the element shoulder registers for correct location and prevents twisted lead wires. The new construction is available on the company's regular Plug Tip, Hatchet, Featherweight and Super-Powered irons.

Identify as IEN - 4586

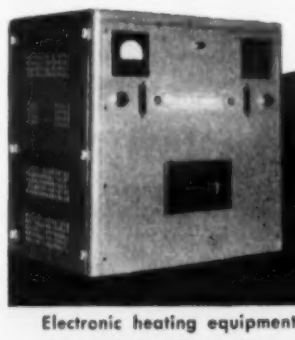
Rain and snow are excluded, objects cannot drop into the dome opening on tank cars, or trucks, when the opening is closed with a Frommelt Industries tank car safety cone. It is made of fire proofed and water proofed canvas and is weighted at the bottom. A drawstring opening in the top provides entry for a fill or unload pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4587

what's your metal heating PROBLEM?

hardening?
brazing?
annealing?
soldering?



solve it with a **REEVELEC ELECTRONIC GENERATOR**

Electronic heating equipment will sharply reduce production time and virtually eliminate rejects.

The unit shown here will anneal an auto clock spring in ¾ seconds; weld .020 nichrome wire in 1.5 seconds; silver braze two watch case lugs in 35 seconds.

Operated by unskilled labor, it has automatic time cycle control, automatic breakers in AC and high voltage circuits, current matching transformer and many other important features.

Occupies only 16" x 21" of bench space.

Cost is amazingly low . . . write now for complete details.

•

Reevelec Generators are available in all sizes up to 200KW. Extremely flexible, they can be adapted to many production processes by a simple tooling change. Our engineers will help you determine the model best suited to your needs.

REEVE ELECTRONICS 613 W. LAKE ST. CHICAGO 6, ILL.

If you write maker identify as IEN - 4588

REDUCE THE OVERHEAD THAT IS UNDERFOOT

Darnell Casters

Free Manual

DARNELL CORP., LTD.
DOWNEY, (Los Angeles County) CALIF.
60 Walker Street, New York 13, N.Y.
36 North Clinton, Chicago 6, Illinois

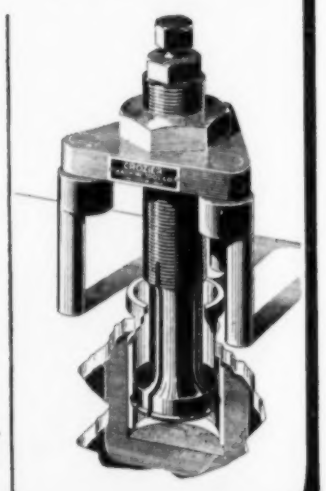
If you write maker identify as IEN - 4589

NEW EXTRACTOR

removes bushings from blind holes ...cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.

For complete information write Department IEN-4.



CROZIER *Machine Tool Co.*
684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 4590

Replaceable Spout Tip

Golden Rod Hydraulic PUMP OILERS

A STREAM OR A SINGLE DROP . . . instantly!

- Volume determined by thumb-pressure.
- Exceptionally rugged, heavy welded steel.
- DELUXE—Capacity: 1, 1½, 2 Pt.
- Guaranteed for 5 Years!
- Thumb-pressure starts oil flow instantly.
- Up to 250 lbs. tip pressure.
- Replaceable Spout Tip.
- 3 spout types—straight, angle or flexible.

Order from your Mill Supply Jobber

DUTTON-LAINSON CO.
Dept. EN-1 HASTINGS, NEBR., U.S.A. Since 1888

If you write maker identify as IEN - 4591

The Jacques Model 45 Slitter & Rewinder

For Low Cost Slitting & Rewinding

OF PAPER, PLASTICS, FABRICS, LAMINATIONS, ETC.

Here's a machine designed for low cost slitting and rewinding of light materials up to 20/1000" thick. Handles widths up to 45" and parent rolls up to 40" diameter.

Because of its improved design, this Jacques slitter saves you money in initial cost, and in installation and operating expenses. Faster, easier production is made possible by new patented frictions. Available with rotary contact or razor-type cutters (or both) for your individual needs.

FREE FACTORY TEST RUN! Send your material and specifications to our plant for free test run at no obligation.

WRITE FOR DESCRIPTIVE FOLDER! *Get detailed information now!* For trouble-free performance through the years, specify only *genuine* Hobbs replacement parts.

HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 5, MASS.
EST. 1882

Producers of Modern Machinery for Modern Industry

Jacques Hand and Power Shears, Slitters and Rewinders, Hobbs Autotronic and Tri-Power Die Presses, Paper Box Machinery and Touch-O-Matic Industrial Cutters.

If you write maker identify as IEN - 4592

HHB

Scientific minds at H. H. Buggie And Company are constantly at work with electronic

research

to make possible advanced

design

and outstanding features of

engineering

all of which is supplemented by skilled craftsmanship in

manufacturing

to provide outstanding products including . . .

CONNECTORS, CABLE ASSEMBLIES and COMPONENTS for America's electronics industry

AN Types
RF Types
Rack and Panel
Cable Assemblies

IN ADDITION to the products listed above, H. H. Buggie And Company designs, engineers and manufactures many *special parts and assemblies* for companies in the field of electronics. We invite your inquiries.

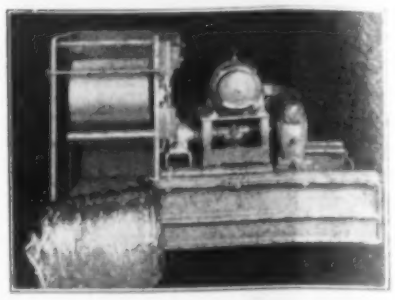
H. H. BUGGIE And Company
TOLEDO 4, OHIO
Sales Engineers in All Principal Cities

Skilled in Electronic Component Parts
RESEARCH • DESIGN
ENGINEERING
MANUFACTURING

If you write maker identify as IEN - 4594

BUNDLING . . Winding machine to make bundles of stringy scrap

Source: PHILLIPS MINE & MILL SUPPLY CO.
2500 Jane St., Pittsburgh 3, Pa.



Makes No. 1 melting scrap

The operator of this new Scrap Baller starts a run of stringy scrap on the mandrel that operates horizontally in the housing to the left of the driving motor and gear reduction. Then he closes the motor circuit. The mandrel pulls the scrap in and winds it under a floating compression roll. This roll rises as the winding proceeds until it actuates a switch that opens the motor circuit. A hydraulic pulling device removes the mandrel from the ball of scrap so it can roll from the housing for disposal.

If you write maker identify as IEN - 4595

COUNTING . . Electric unit, pencil actuated to mark and to count

Source: MAY ENGINEERING CO.
6053-57 Lankershim Blvd., North Hollywood, Calif.

It "remembers"

The user of this new Mark-N-Count equipment plugs it into a 110-volt ac. line. Then he holds the actuating pencil to check items on prints, as in estimating, or to take inventory, or total items in production. An audible click accompanies each count. When the total has been reached it is read and the unit is reset to zero by turning a knob. List price is about $88.

If you write maker identify as IEN - 4596

FILTERING . . Pipe line unit removes oil and vapor from air, gas

Source: DOLLINGER CORP.
9-13 Centre Park, Rochester 3, N. Y.

Mounts in line

Series AA is a new filter, employing an absorption pad to remove the last traces of oil and water vapor from an air or gas line operating at pressure to 40 pounds. Series CH is a companion unit, with a radial fin insert in place of the pad, to take out dirt and pipe scale. Two sizes measure 3½ in. in diameter by 6½ and 10 in. in length.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4597

do you use POISONOUS carbon tetrachloride?

FORMULA 602 SAFER!

Continued use of carbon tet causes severe and incurable damage to liver, kidneys, heart, adrenal glands and nervous system by absorption through skin. Safety authorities caution against its use. FORMULA 602 is 24 times safer than carbon tet!

FORMULA 602 CLEANS MOTORS AND ALL ELECTRICAL EQUIPMENT

FORMULA 602 effectively cleans motors, radio parts, coils, condensers, generators and all electrical equipment. It dries rapidly without leaving a residue, corroding metals or damaging electrical insulation.

OTHER USES!

FORMULA 602 is used to remove residues of solder flux from contact points, dip tank degreasing of parts and tools, as a diluent and wherever carbon tet is now used for cleaning!

SEND FOR FULL INFORMATION!

RESULT OF TEST BY INDEPENDENT LABORATORY!

CARBON TET
10 rats inhaled 125 parts carbon tet per million parts air for 2 days, 30 minutes each day. All 10 rats died!

FORMULA 602
10 rats inhaled 125 parts Formula 602 per million parts air for 14 days, 30 minutes each day. All rats alive and healthy after test!

the PENETONE co.
BOX IEN-453 TENAFLY, NEW JERSEY

If you write maker identify as IEN - 4598

use COFFING Quik-Lifts

for tough-spot dependability

Pick out the tough spots on your production line . . . key spots where a breakdown means a costly shutdown. Then find out how the Coffing Quik-Lift's dependability really pays off. This hoist is a full-fledged production unit, built to stand up under hard assembly-line use. Its "tough spot" performance will soon repay its cost many times over in down time saved. So do as many others have done. Start the Quik-Lift on a hoist assignment where others have failed — then standardize on Coffing after it has proved its value the hard way.

For more information on Quik-Lift Electric Hoists, write for Bulletin P4E.

SOLD BY DISTRIBUTORS EVERYWHERE

COFFING HOIST COMPANY
DANVILLE, ILLINOIS

Hoist-Alls • Safety-Pull Ratchet Lever Hoists • Mighty-Midget Pullers • Spur-Gear Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys.

If you write maker identify as IEN - 4599

HOW YOU CAN *hear better* TO TELEPHONE

Loudness of Noise Reduced 50%* Inside a BURGESS-MANNING *Acousti-Booth*

- Thick walls of sound absorbing material, patented design, and craftsmanlike construction reduce the loudness of noise by 50%* . . . leaving a zone of quiet for ease of telephoning.
- Doorless construction makes for a light, airy, well ventilated booth . . . easy to keep clean . . . low maintenance.
- Easy to move . . . Suited to any noisy location . . . Wall and floor models . . . Handsome in appearance.

Write for Bulletin A-107

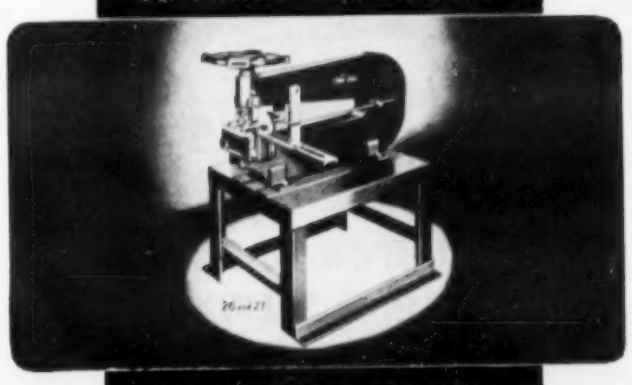
Model 211 Floor Model

** Based on studies by a prominent research organization.*

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 4600

WHITNEY METAL TOOL COMPANY
41 YEARS EXPERIENCE



WHITNEY-JENSEN
Nos. 26 - 27
PUNCHES

The ball-bearing screw press principle is here applied to a large, hand-operated punch mounted on a sturdy floor stand. Full throat depth for work in sheets; with tie-plates, throat depth is decreased and capacity increased. Capacity, full throat depth, mild steel (No. 26) 2" thru 3/32", (No. 27) 2" thru 1/16". Capacity, with tie-plates, 1/2" thru 3/8", both models. Send for our new catalog.

WHITNEY METAL TOOL COMPANY
200 FORBES STREET, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 4601

THE new Skinner X5 Solenoid Valve is basically the same as the widely accepted and tested V5, but modified to a construction that is Underwriters' approved for Class I, Group D hazardous locations. Small size and lightweight features are retained, and the X5 is low in price because of the many parts which are interchangeable with other Skinner valves. Rating is 10 watts max.; soft, spring loaded seals prevent leakage; internal parts are stainless steel; wide variety of port locations in 1/8" and 1/4" size; most types available for metering; for AC or DC in a wide range of voltages and frequencies; can be mounted in any position; supplied as two-way normally open or closed, three-way normally open, closed or directional flow. *Write today for details!*

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN - 4602

You Just Can't File Away These Problems...

BLAST CLEANING

...of bridges, buildings, tanks, structural work

Pangborn Blast Cleaning Machine—Cleans tanks, bridges, structures quickly and economically. Ideal for maintenance and other jobs, such as removal of dirt, rust, etc. Six sizes, stationary or portable, $170 and up.

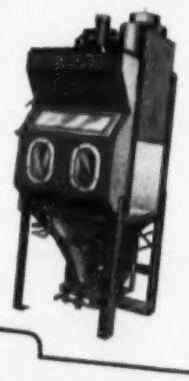
...of small castings, forgings, stampings, heat treated parts.

Pangborn Blast Cabinet—Saves time and money in cleaning small metal parts, removing rust, scale, grime, old paint, etc., in a few seconds. Perfect for producing clean, smooth surfaces on pieces 60" x 35" in size. Models from $319 and up.

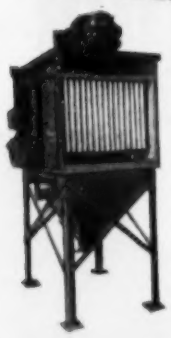
PRECISION FINISHING

...of molds, dies, tools

Pangborn Hydro-Finish Cabinet—Removes scale and directional grinding lines . . . holds tolerances to .0001" and prepares surfaces for painting or plating. Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from ..... $1410 and up.



CONTROLLING DUST



...at the source of origin

Pangborn Unit Dust Collector—Traps dust at the source. Reduces maintenance costs . . . keeps plant clean and improves community relations. Allows reclamation of valuable material. Models from ..... $286 and up.

BUT YOU CAN MAIL THIS COUPON TO PANGBORN FOR HELP IN SOLVING THEM!

Pangborn

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

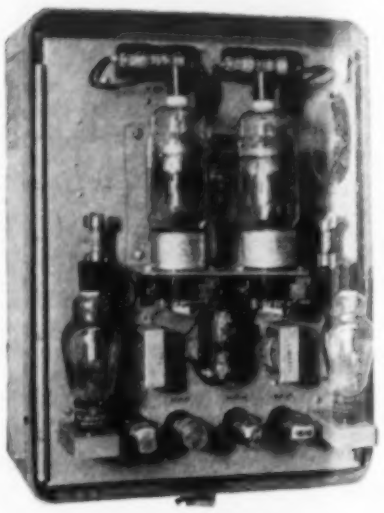
☐ Blast Cleaning Cabinets
☐ Blast Cleaning Machines
☐ Unit Dust Collectors
☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked. To be used for.....
.....
Name .....
Company .....
Address .....
City .....Zone....State.....

If you write maker identify as IEN - 4604

DRIVE . . Electronic variable speed, 3/4 to 3 hp. from an ac. power line

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Bulletin GEA-5829

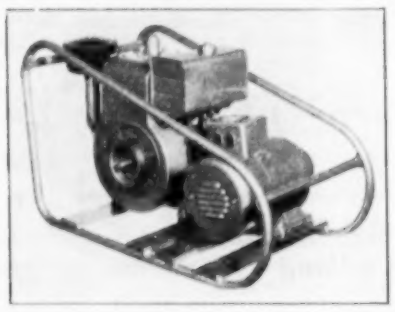
Illustrated is the control panel for the company's new simplified Thy-Mo-Trol electronic variable speed drive. Complete equipment consists of a transformer with dual primary for operation on 220 or 440-volt single-phase ac., the panel shown, a shunt wound dc. motor designed particularly for operation from a rectifier, a control station including pushbuttons and a potentiometer to set and adjust speed.

The equipment provides stepless speed variation in a range from 5 to 20 to 1 in reversing and non-reversing service. Standard speed range is 1,750 to 350 rpm. in the 5 to 1 ratio. It is 1,750 to 88 rpm. in the 20 to 1 ratio.

If you write maker identify as IEN - 4605

GENERATOR . . Engine driven ac., 2 kw. for stand-by and utility duty

Source: PIONEER GEN-E-MOTOR CORP.
5831 Dickens Ave., Chicago 39, Ill.



For lights, tools

Belt connection to an air-cooled gasoline engine and mounting on a tubular skid frame feature the new Model SS-3990 generator. Operation is on 60-cycle 110 or 220-volt single-cycle ac., the latter in dual-voltage design. Speed is 3,600 rpm. The generator is drip proof construction. It is mounted on a floating base to hold the belt at correct driving tension. The engine is a Briggs and Stratton Model 14 with rating at 4.8 hp. Weight is 180 pounds.

Identify as IEN - 4606

Technical and scientific reports from government and private sources, on subjects such as new products, new processes, improvement in industrial techniques are stocked by the Office of Technical Services, Department of Commerce. They are catalogued in a monthly "Bibliography of Technical Reports" which lists them and provides abstracts. The bibliography is available at $5 per year.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4607

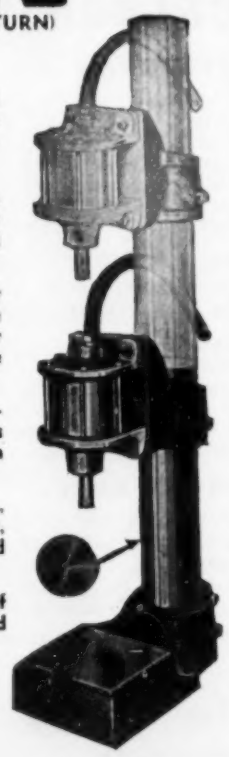
AIR-MITE

AIR ARBOR PRESSES
(AIR OR SPRING RETURN)

Completely Flexible

AIR-MITE now supplies solid steel upright columns in any lengths required to give you these important flexibility features:

1. Normal ram clearance of 0" to 6" may be increased to any clearance required for special application.
2. Supplementary or replacement cylinders with any ram stroke required are available for quick, easy mounting on same brackets.
3. Rapid socket wrench adjustment cylinder bracket swivels for perfect alignment with work.



Presses are available in 1/4, 1/2, 3/4, and 1 ton capacities—for stacking, riveting, marking, punching and similar operations.

Write for complete catalog of Air-Arbor Presses and single and double acting Air Cylinders.

AIR-MITE
4417-L West Carroll Ave.
Chicago 24, Ill.

If you write maker identify as IEN - 4608

WICKWIRE ROPE SLINGS

tough...strong...extra flexible

Wickwire Rope Slings are offered in both braided and conventional types . . . are designed to hitch on to heaviest loads with utmost safety, ease of handling and absolute security of attachments. Where extreme flexibility is required, Wickwire Slings of braided design give definite advantages in non-kinking qualities and in their ability to handle materials of all types and shapes without taking a permanent set.

Let us know your requirements. Our engineers will be pleased to analyze your sling problems and recommend the correct solution.

THE COLORADO FUEL AND IRON CORPORATION – Abilene (Tex.)
Denver • Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORPORATION – Los Angeles
Oakland • Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION–Boston • Buffalo • Chattanooga
Chicago • Detroit • Emlenton (Pa.) • New York • Philadelphia

WICKWIRE ROPE
CF&I PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 4609

Millions of users agree— you cut more pipe with less work with RIDGID Heavy-Duty Cutters

There's a big difference in pipe cutters—and you're sure of it the first time you slap a RIDGID on a pipe (any kind) and see how easily cleanly it rolls through the metal. Beautifully balanced for easy action. Factory tested for perfect tracking—and guaranteed warp-proof housings of special malleable hold it. High alloy thin-blade or heavy-duty cutter wheels that leave practically no burr. You cut pipe fast with least effort. Ask your Supply House for the more-for-your-money RIDGID.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID Work-Saver Pipe Tools

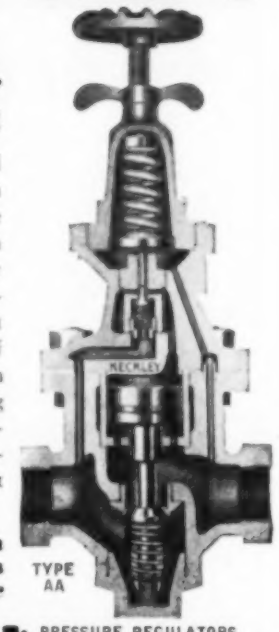
If you write maker identify as IEN-4611

KECKLEY

pressure regulators

Designed for better control at less cost

When your specifications call for pressure regulators for steam or air service, you want accurate control of reduced pressures which you can depend on, day in and day out. You also want low maintenance, and long service for greatest possible economy. Our years of experience in building precision regulators assures you of getting these advantages. Ask your Keckley representative or your industrial distributor about the correct regulator for your job!



TYPE AA

Send for Catalog 53-E with Complete Information on Keckley's Complete Line

- RELIEF VALVES
- FLOAT BOXES
- SOLENOID VALVES
- BALANCED VALVES
- FORGED STEEL GAUGES
- MOTOR OPERATED VALVES
- PRESSURE REGULATORS
- TEMPERATURE REGULATORS
- PUMP GOVERNORS
- FLOAT VALVES
- POP SAFETY VALVES
- STRAINERS

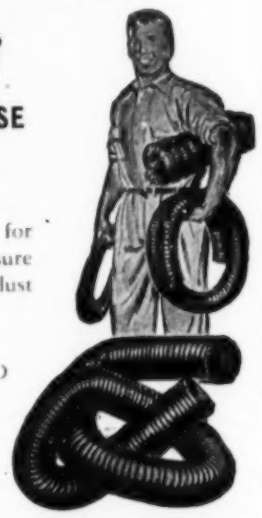
O. C. KECKLEY COMPANY
400 West Madison Street • Chicago 6, Illinois

If you write maker identify as IEN-4612

FOR VENTILATION
FUME AND DUST CONTROL
AIR CONDITIONING

FLEXAUST

SPIRAL-REINFORCED HOSE
LIGHT, STRONG AND VERY FLEXIBLE



Flexaust is of proved suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control, air conditioning.

EXTREMELY EASY TO INSTALL — EFFICIENT AND ECONOMICAL IN USE

SIZES: 1¼" to 28" dia.

Various Flexaust types, accessories, and other hose types also available:

BLOFLEX
Non-reinforced
Collapsible hose

PORTVENT
Ring-reinforced
retractable hose

Write for full descriptive data and prices

AMERICAN VENTILATING HOSE CO.
Dept. IE-4, 100 Park Ave., New York 17, N. Y.
Plant: Amesbury, Mass.

If you write maker identify as IEN-4613

In single and double strand units 1" throat—a great time saver . . . no lift-truck or jitney should be without "Granny Grip"—a great time saver.

(two strand)

$29.00 net

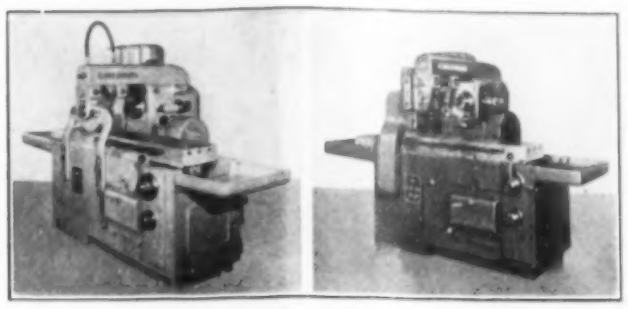
Quickly attaches itself to open top containers, sheet stock, boiler plate, etc. . . . Lifts anything over which her jaws can be slipped (one-inch throat) — equally adaptable when used with overhead cranes, chain falls, jib cranes . . . with lift trucks it lifts and snakes containers into and out-of seemingly inaccessible places. The heavier the load the tighter the grip—tests to 7850 pounds . . . users tell us—you can make no better investment of any kind in material handling equipment. "Granny-Grip" is a pip of an investment. Send us an order for a sample—once you have tried them—you will want to put them on all of your equipment.

The BOYER-CAMPBELL COMPANY
6540 St. Antoine "Everything for Safety" DETROIT 2

If you write maker identify as IEN-4614

MILLING . . Automatic machines, plain, rise and fall, duplex designs

Source: CINCINNATI MILLING MACHINE CO.
Marburg & Kline Sts., Cincinnati 9, Ohio



Illustrated data in publication M-1760

Illustrated are two of three styles in the company's new No. 2-24 line of automatic milling machines. Table cycles can be set up or changed quickly by changing an assembly of cams on a short demountable shaft in the bed. The machines mount a standard table measuring 11 in. in width by 55⅝ in. in length. Standard travel is 24 inches. Standard rise in the rise-and-fall machine is through 8 in. from a minimum of 5 in. above the table top.

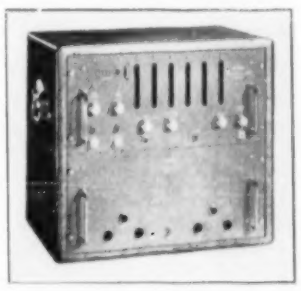
The spindles are equipped with 3 hp. motors for standard speeds or 5 hp. for high speeds. Quill mounting provides for cross adjustment. Bearings, gears and other parts within the spindle carrier are lubricated by a combination of circulating and splash action. Rapid traverse for the table is at 300 ipm.

Sixteen feeds range from ½ to 20 ipm. Twenty speeds are between 30 and 1,200 rpm. Vertical feed for the spindle carriage, on the rise-and-fall machine, are infinitely variable between 1 and 40 ipm. at a dial control.

If you write maker identify as IEN-4615

COUNTING . . Electronic equipment reads elapsed time between two events

Source: BERKELEY SCIENTIFIC DIVISION
2202 Wright Ave., Richmond, Calif.



"Second splitter"

Model 5120 time interval meter is a new assembly of a crystal oscillator, input circuits, an electronic gate and six of the company's decimal counting units. It provides a direct reading of elapsed time between any two events in microsecond increments to a maximum of one second. Accuracy is within one microsecond. Any occurrence can be timed that can be translated into changing voltages. Timing can be started and stopped by independent voltages.

The first event, or voltage, opens the electronic gate and passes the one-megacycle time base signal to the first of the decimal counting units. The second event closes the gate. The time interval between the two events is displayed in direct decimal form in increments of one microsecond. The total number reads direct so no interpolation is required. Each digit of the number is indicated by the illumination of a single figure on each decimal counting unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4616

IMPERIAL Tubing Tools

. . . The Tools that Experts Depend on for Faster and Better Work

HI-DUTY TUBE CUTTER

Free wheeling ball bearing action. Roller type with flare cut-off groove. Retractable reamer. **No. 274-F** for ⅛" to 1" tubing. Other models. Also saw-ing vises.

FLARING TOOLS

All types, for making 45°, 37° and double flares . . . on copper, aluminum, steel and stainless steel tubing. **No. 500-F** Flaring Tool, illustrated, makes 45° flares and then burnishes them.

TUBE BENDERS

Lever-type, gear-type and spring-type benders for bending all kinds of tubing. Illustrated is **No. 364-F** individual lever-type bender. Also models that take a wide range of sizes.

See Your Supply House
Ask for Catalog No. 3011

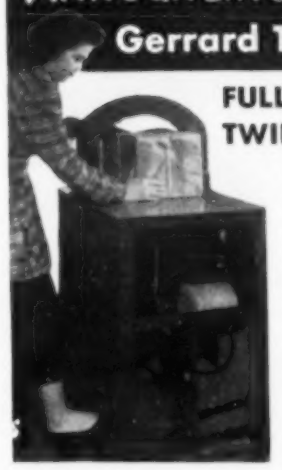
THE IMPERIAL BRASS MFG. CO., 508 S. Racine, Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL Pioneers in Tube Fittings and Tube Working Tools

If you write maker identify as IEN-4617

ANNOUNCING A NEW Gerrard Tying Machine . . .

FULLY AUTOMATIC B.S.M. TWINE SEALING MACHINE



The Gerrard B.S.M. Twine Sealer is completely automatic, makes a 1-cycle wrap, and secures the twine with a metal seal so firmly that the twine will break before the seal will slip. Bundles are limited to a 14" width and a 9" height.

● Here's a new, completely automatic tying machine that may fill a need in your plant . . . the Gerrard B.S.M. Twine Sealing Machine. Just place the bundle in the tying area, step on the pedal, and in three seconds, the twine is wrapped around the bundle, drawn to a preset tension, securely fastened with a *metal seal*, and cut. The bundle is firmly gripped and the tie will remain neat, strong and tight until the twine is cut. Several ties can be put around a bundle as quickly as it can be moved into position.

Look around your mailing or shipping department. There may be several spots where a Gerrard B.S.M. Twine Sealing Machine can save you time and money, and do a better tying job at the same time.

Send for folder describing the Gerrard Twine Sealing Machine. It's Free.

Also phone, write or wire for further information about the Gerrard Method of Twine Sealing or of Steel Strapping. A Gerrard engineer will gladly call, without obligation, to discuss your packaging and bundling requirements.

Gerrard Steel Strapping Division, United States Steel Corporation
4701 South Richmond St., Chicago 32, Ill.

USS **GERRARD STEEL STRAPPING**
UNITED STATES STEEL

If you write maker identify as IEN-4618

NEW MANCO

HYDRAULIC RIVETER

Here's fast, silent, and powerful hydraulic riveting. Riveting cycle only one second. Easy-to-operate hand lever valve mounted on riveting head. No solenoids. Capacity for ¼" and 5/16" rivets. Adjustable pressure setting for use on straight and shoulder rivets. Riveting yoke reach is 1¾" with a gap of 1⅛" including rivet sets. Other yokes also available. Full swivel about cylinder axis permits easy placement. Compact electric hydraulic pump. Weight of riveting head . . . 18 lbs.

Model R-211-188E

Other Manco Rivetters are available with capacities from 10 to 150 tons. Send us your riveting problem.

Dept. N-4

MANCO *mfg. co.*
Bradley, Illinois

If you write maker identify as IEN-4619

S.S.WHITE "*AIRBRASIVE*" UNIT

uses a gas-propelled stream of abrasive particles to perform a variety of operations, including controlled removal of surface coatings, cutting, drilling, etching and finishing.

The cutting action is extremely cool and involves no vibration or pressure. Cuts can be held as fine as .018" in diameter.

The unit is ideal for precision work on electronic parts, glass, ceramics, metal and many other materials.

For complete information write for Bulletin 5212

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO.
Dept. NA, 10 East 40th St.
NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 4620

FOR BETTER PRINTS...

BRUTEX

PENCIL TRACING CLOTH

1. **SUPER-VELVET MATTE SURFACE** . . . white or blue — exactly right for pencils of even the harder grades.
2. **UNIFORM TRANSLUCENCY** . . . makes clean, sharp prints.
3. **ERASES EASILY** . . . no "ghosting". Surface is unaffected by even repeated erasures.
4. **MOISTURE-RESISTANT** . . . no "spots" from dampness or perspiration.
5. **PERMANENT** . . . won't discolor, become brittle, or lose translucency.

Prove it on a FREE SAMPLE! Write for free sample and booklet. CHARLES BRUNING COMPANY, INC., Dept. R43, 4700 Montrose Ave., Chicago 41, Ill. A-3-1

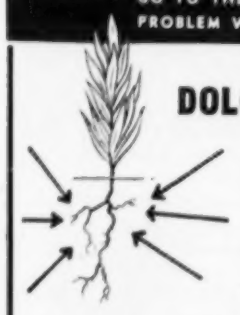
BRUNING

Everything for the Engineer and Draftsman

If you write maker identify as IEN - 4621

GET THOSE WEED ROOTS!

GO TO THE ROOT OF YOUR WEED PROBLEM WITH THESE DOLGE PRODUCTS



DOLGE SS WEED-KILLER

Where no vegetation whatever is desired such as your parking places, walks and tennis courts. Penetrates deep down to plant roots and *kills*. Sterilizes the soil, preventing normal sprouting of wind-blown seeds. Weeding the thorough modern chemical way eliminates backbreaking toil and saves the cost of many labor-hours.

E.W.T. SELECTIVE WEED-KILLER (2-4-D)

The *efficient* way to control weeds on your lawns. Works its way down into the roots of brush, dandelion, plantain, poison ivy, ragweed, sumac and other obnoxious plants, *but does not injure most turf grasses.*

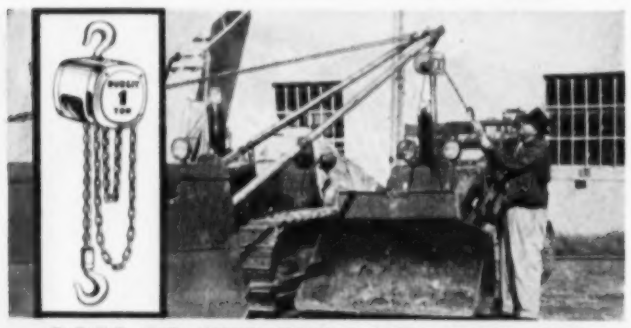
Please write for descriptive literature explaining how these tested DOLGE products can best be used for *your* weeding requirements.

FOR **FREE SANITARY SURVEY** OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

Dependable **DOLGE**

WESTPORT, CONNECTICUT

If you write maker identify as IEN - 4622



GOES TO THE SPOT TO SPOT-LIFT

The 'Budgit' Aluminum Chain Block is the ideal portable hoist for easy, fast spot-lifting. The ¼-ton size weighs only 29 lbs.; yet, it is so efficient a pull of only 25 lbs. on the hand chain lifts the full load.

Use the one-man 'Budgit' on all your maintenance and emergency lifting jobs. It's the toughest spur-geared chain block ever produced. The hooks won't fracture. No ordinary hacksaw can cut the load chain. Every fastening is splined for extra strength. The large automatic load brake provides quick, powerful holding action. Man, load, and hoist are completely protected.

Whenever spot loads must be handled in a hurry, you can depend on the lightweight 'Budgit' Aluminum Chain Block. Sizes range from ¼ to 2 tons. Ask your "Shaw-Box" Distributor for all the facts or send for Bulletin 398.

'Budgit' CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.

Muskegon, Michigan

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, and 'American' Industrial Instruments.

If you write maker identify as IEN - 4623

FLOORS . . Hinged platform to load trucks through a building wall

Source: SUPERIOR RAILWAY PRODUCTS CORP.
510-14 Franklin Ave., Pittsburgh 21, Pa.

To order for specified requirements

Model A-58-P is a representative unit in the company's new line of hydraulic hinged platforms for truck loading and unloading where a permanent platform cannot be installed. The new unit measures 5 by 8 feet. It hinges in a doorway cut through a building wall. It is raised and lowered by hydraulic pressure under hand control.

It seals the doorway but provides a covered central opening, measuring about 1 by 1 ft., through which an operator can look. It rests on two support legs, in horizontal position, and provides a steel skidproof surface over which loads can be wheeled into or out of a truck.

If you write maker identify as IEN - 4624

TRUCKS . . Self engaging couplers to assist in quick trailer handling

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio

Three types to choose from

The company announces availability of three coupler designs for use on its various types of trucks, tractors and trailers. Each is built with an open jaw to receive the male end of the trailer coupler. Each hooks onto the trailer coupler when it enters the jaw.

Two designs are fitted with spring actuated hooks. The third employs a ball type lock. One of the three designs is released by pulling upward on a chain. A second is fitted with a foot lever. The third has a counter-weighted crank. All assemble at the standard height of 11½ in. from the floor to the center line in regular construction.

Identify as IEN - 4625

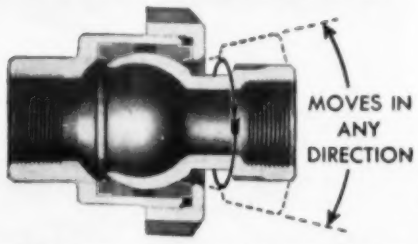
Add a dip tank to your painting conveyor line, fill it with Klem Chemicals One Step Stripper and re-route the conveyor track so your line hangers and work hooks will go into and out of the liquid when there is no work in place on them. You can keep the hangers, hooks and dipping equipment clean and free from stray paint without any periodical cleaning. You can strip paint from defective work at the same time.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4626

BARCO *Flexible* **BALL JOINTS**

—when you need movable joints in piping handling



STEAM, OIL, CHEMICALS

Send for New Bulletin No. 215

- Provides for movement in piping—up to 40° side flexibility, plus 360° rotating movement.
- Stainless steel and chemically inert gasket for strong chemicals. No metal-to-metal contact. Choice of body materials.
- One Barco Ball Joint does the work of two or more ordinary swivel joints because "it moves in any direction!"
- Many models available. For pressures to 7,500 psi; temperatures to 1000°F. 15 different sizes, ¼" to 12". *Ask for recommendations.* BARCO MFG. CO., 538-E Hough St., Barrington, Illinois (a Chicago Suburb).

THE ONLY TRULY COMPLETE LINE OF FLEXIBLE BALL, SWIVEL, SWING AND REVOLVING JOINTS

If you write maker identify as IEN - 4627

FOR PRODUCTION

AIR PRESSES

AIR HAMMERS

AIR INDEX TABLES

AIR-HYD. PRESSES

1953 CATALOG ON REQUEST

AIR-HYDRAULICS INC.

809-13 Belden St. Jackson, Mich.

If you write maker identify as IEN - 4628

BERRY

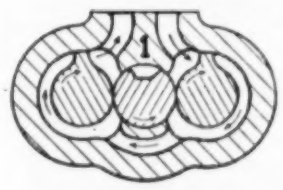
Rotodraulic TRADE MARK

Rotating Piston PUMP *or* MOTOR

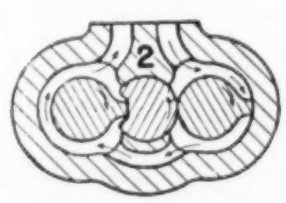
Operation as a pump or as a motor is continuous, smooth, quiet, without pulsation. Basic simplicity gives the design long life with low maintenance as pumps in elevator service or on machine tools. Used as transmissions in oil fields, mines, steel mills, mobile vehicles, the rugged construction endures many thousands of hours of rough treatment in all climates without servicing.

AS A MOTOR

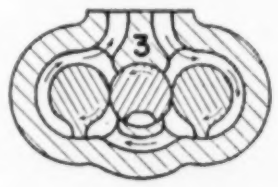
All three members are geared together in a 1:1 ratio. Input shaft is on center member.



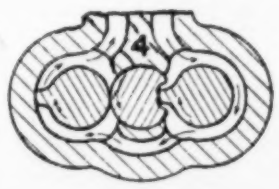
POSITION 1..Both pistons facing up, oil entering the right-hand port, driving both pistons in clockwise direction, exiting through the left port.



POSITION 2..Both pistons rotated to right, oil bypassing the left-hand one to the exit. The right-hand piston sealing against the center rotor or rolling seal.



POSITION 3..Both pistons rotated to face down, the oil driving both while the center rotor seals both pistons.



POSITION 4..Both pistons rotated to the left, the oil bypassing the right one and driving the left one. The left piston is sealing against the rolling seal.

Two pressure ratings are 500 and 1,500 PSI. Rating is 60 to 240 GPM. for the 500-PSI. assembly with one to four pumping chambers on a common shaft. Rating is 9.4 to 28.2 GPM. for the 1,500-PSI. pump with one to three chambers.

CATALOG 5209

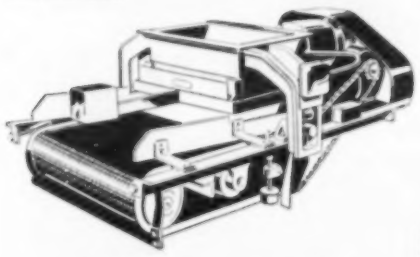
Explains action, shows sections and combinations, includes performance specifications and selection data.

Berry Division
Oliver Iron and Steel Corporation

1019 Oliver Building • Pittsburgh 22, Penna.

If you write maker identify as IEN - 4630

CONSTANT-WEIGHT FEEDER



GRINDING
MILL
FEED
CONTROLS

A regulating feeder which maintains a positive constant-weight feed rate regardless of feed size or volumetric variation. Bulletin 33-D-38.

"ELECTRIC EAR"®

An electronic mill feed control which increases grinding mill capacity 8 to 20%. Bulletin 42-38.

HARDINGE
COMPANY, INCORPORATED
YORK, PENNSYLVANIA—240 Arch St. Main Office and Works
NEW YORK 17 • SAN FRANCISCO 11 • CHICAGO 6 • HIBBING, MINN. • TORONTO 1
122 E. 42nd St. 24 California St. 205 W. Wacker Dr. 2016 First Ave. 200 Bay St.

If you write maker identify as IEN - 4631

Added Evidence that—

Everyone Can Count on VEEDER-ROOT

REPORTER AT LARGE . . . that's what you might call this new Veeder-Root Reset Magnetic Counter . . . adaptable to remote counting from machines or processes to central boards or instrument-clusters, wherever you want to put them. NOW . . . what can your imagination do with these few facts? For the *full facts*, write:

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONN.

If you write maker identify as IEN - 4633

PRESS . . With spacing table to cut small non-metallic blanks

Source: HOBBS MFG. CO.
46 Salisbury St., Dept. IEN-1, Worcester 5, Mass.

Originated in England

Labels, tickets, small wrappers, display cards, discs, shaped cardboard blanks, washers, gaskets can be cut at high speed from paper or similar non-metallic sheets with this new strong Automatic Label Cutter press. Dies are located in the machine table beneath the guard-surrounded reciprocating head. Work is pushed through them to a conveyor that forms part of the assembly.

In application, to make labels, an operator assembles a pile of about 100 paper sheets, either plain or printed. He jogs them for register and applies glue to the edge so they cannot shift while being cut. The complete pile is then secured by the grips on the spacing table, the longitudinal and lateral spacer guides are set up and the machine is started.

The head reciprocates to cut 100 labels on each stroke in one row of the sheet until that row has been completed and the labels have been deposited on the conveyor belt. Then the spacer table shifts one row inward, retracts to starting position and the next row is cut. This is repeated until all the blanks have been cut from the sheets and the machine is ready for reloading. Production, with a single-place die, is 150,000 labels per hour.

If you write maker identify as IEN - 4634

PYROMETER . . Console indicator to scan 200 temperature circuits

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.

For centralized control

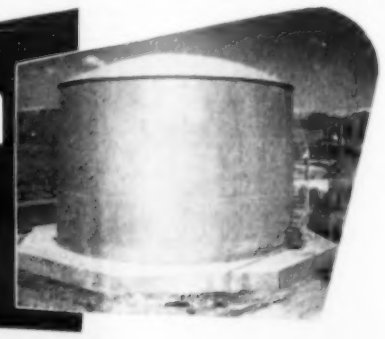
New assembly combines a Model-D Speedomax pyrometer indicator with an executive type desk and flanking switch panels. The mounting is low enough, 13 in. above the desk top, so the operator has an unobstructed view of a main control room panel. The housing slopes at 60 deg. so the seated operator can read the 25½-in. drum type scale as it spins from point to point and stops. Balancing time is 4 sec. on full scale.

The removable panels hold 100 toggle type switches for 200 indicator or 100 indicator and recorder readings. Installation calls only for connection of the thermocouple extension leadwires and the line voltage supply. A concealed adjustable wiring duct, beneath the console at floor level, holds the external leadwires to the individual thermocouples.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4635

HORTON STEEL TANK



for storing acid

The welded steel Horton tank shown above is used to store sulphuric acid storage at the Filtrol Corporation's plant in Salt Lake City. It is 40 ft. in diam. by 24 ft. high and holds 225,000 gallons.

This tank is a typical example of Horton structures used throughout industry. When planning welded steel storage tanks, pressure storage tanks, elevated water tanks or special steel plate work, write our nearest office for quotations. State type, capacity desired and location.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 4636

Save time... ENGRAVE your own NAMEPLATES

DIALS • PANELS

The fastest, easiest method for engraving individual nameplates, dials and panels.

- Automatic depth regulator.
- Engraves 15 sizes from One master alphabet.
- Equipped with self-centering device.

Send for Catalog IM 23

NEW HERMES, Inc. 13-19 University Place, N.Y. 3
In Canada: 359 St. James St., Montreal
World's Largest Manufacturer of Portable Engraving Machines

If you write maker identify as IEN - 4637

Introducing NEW IDEAL Cush'N-Blo SOFT-FACE HAMMERS

the Safer Hammer that Saves the Surface!

- New IDEAL Cush'N-Blo Hammers are true SAFETY tools, designed and engineered to give you better soft-face hammer performance—*and save you money at the same time!*

Formulated of special plastic, the replaceable tips outwear ordinary soft-face materials—often by more than 10 to 1. They cannot chip or mushroom under heaviest blows—or "let go" flying particles to endanger workers. Tips are *spark-proof* and securely locked into *spark-proof* heads. They are not affected by oil, grease, gasoline or ordinary industrial acids.

Cush'N-Blo Hammers are carefully balanced for maximum accuracy and driving force. They turn out *more* work and *better* work with minimum effort because they reduce fatigue by reducing rebound.

SOLD THROUGH LEADING DISTRIBUTORS
See Them Now or Mail Coupon for Full Information

- A HAMMER FOR EVERY JOB
- 5 Diameters
- 14 Weights
- Regular or Shot-Loaded

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send catalog data and full description of your Cush'N-Blo Hammers.
Name
Company
Address
City Zone State

If you write maker identify as **IEN - 4639**

H & K Perforated Holes

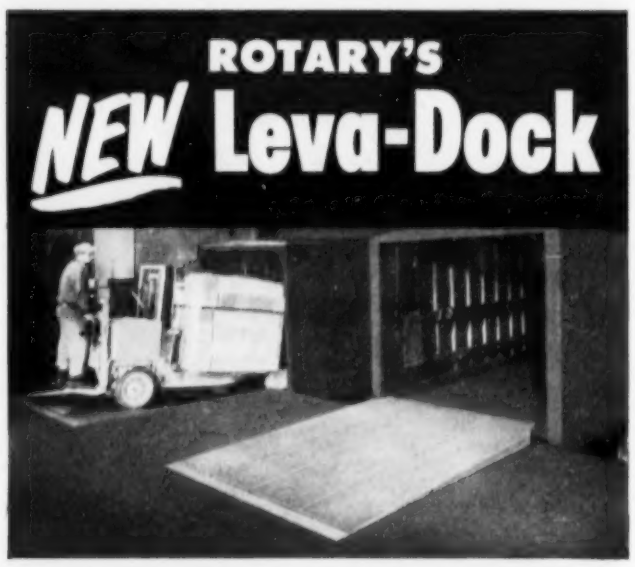
Long ago, even before you used the knot-hole as your pass to the game, H & K perforated holes in unlimited sizes, shapes and patterns for industrial processing, for guarding and protecting, for grilles and for a thousand other purposes.

When specifications are difficult, involving heat and corrosion resisting materials, precision work, special layouts or large production, we invite you to consult our Engineering Department. "If it can be perforated, H & K can do it" is a reputation we aim to maintain. We have facilities for rolling, forming, shearing, welding and otherwise fabricating.

Ask for Catalog No. 62 for complete information.

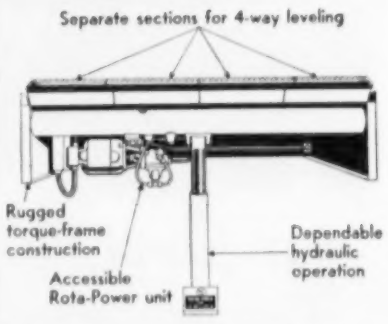
5637 Fillmore Street, Chicago 44, Ill.
114 Liberty Street, New York 6, N. Y.

If you write maker identify as **IEN - 4640**



Adjustable hydraulic ramp for loading docks

- Low cost
- Simple installation
- Easy maintenance
- Assured Safety
- 4-way leveling



■ **Faster, Safer Loading**—Hundreds of material handling men were interviewed, thousands of loading docks checked before the new LEVA-DOCK was designed and engineered. It's Rotary's practical, economical answer to the loading dock problem.

This new automatic ramp compensates 4 ways for varying truck bed heights, out-of-level trucks, and truck spring deflection. Power trucks move quickly, safely in and out of trucks or trailers. A new automatic safety device prevents accidents and costly delays.

The Leva-Dock is a rugged, self-contained unit with oil reservoir mounted in torque-tube frame. All piping and wiring done at the factory except power leads and control wires. Installation costs are cut to the bone.

Mail the coupon and we'll show you how to make big savings at your loading dock.

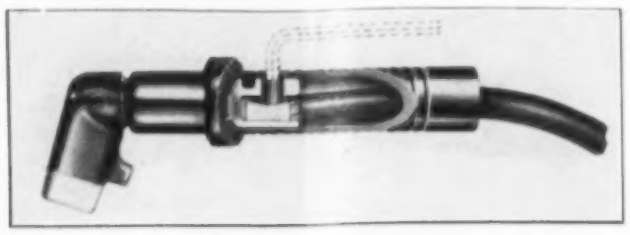
Rotary Leva-Dock

MAIL FOR COMPLETE DATA
Rotary Lift Co.
1070 Kentucky, Memphis 2, Tenn.
Send information on the LEVA-DOCK to:
Name.....
Address.....
.....
See our exhibit at Materials Handling Exposition May 18-22 —Philadelphia.

If you write maker identify as **IEN - 4642**

WELDING . . Arc electrode holder permits deposit of total fluxed length

Source: BERNARD WELDING EQUIPMENT CO. 10220-24 Avenue N, Chicago 17, Ill.



Employs ½ in. socket screw

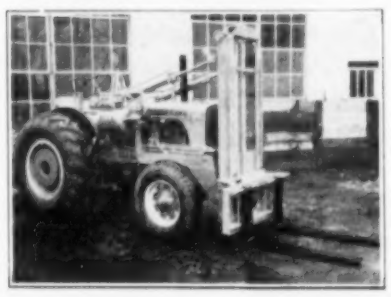
A clamp screw has been added to the solder socket inside the handle of the company's electrode holder, previously described IEN-5470-49. The new arrangement permits use of a wrench to secure the cable in position rather than soldering, or a combination of both soldering and set screw. An electrode is secured in the gripping jaw by turning the handle in the head which is held by bracing a spare electrode against a lug on the inside head face.

Overall length of the 400 and 600-amp. sizes measure 8⅞ and 10⅞ inches. The smaller takes 1/16 to ¼ in. electrodes. The larger takes 3/32 to ⅜ inch. Weight is 17 and 24 ounces.

If you write maker identify as **IEN - 4643**

TRUCK . . Utility attachments mount on any of four standard tractors

Source: BAKER-LULL CORP. 312-16 W. 90th St., Dept. KP, Minneapolis 20, Minn.



For plant and yards

Tilting upright structure and ten interchangeable attachments have been developed by the company to assemble on a Case, Minneapolis-Moline, Shepherd or Oliver tractor. Three load handling capacities are between 2,500 and 6,000 pounds. The illustration shows lift forks in position on a typical four-wheel tractor.

The attachments include the forks, a coal bucket, snow bucket, material bucket, bulldozer blade, reversible angle-dozer blade, crane lifting hook, V-type snow plow, lifting platform and engine driven sweeper. The upright assembly is backed by two hydraulic pistons for 20-deg. tilt to the front and 9 deg. to the back. Lift height of the largest assembly is 100 in. in standard construction.

Identify as **IEN - 4644**

Rogers, Slade & Hill published a 16-point "One Man's Business Philosophy" in its "Management Briefs" a while back. It is repeated in Issue 55 because of the considerable request for additional copies. Representative subjects include advice to "pay the full price," "work out a schedule," "tackle one job at a time," "make instructions definite," "set up reserves." Want a copy?

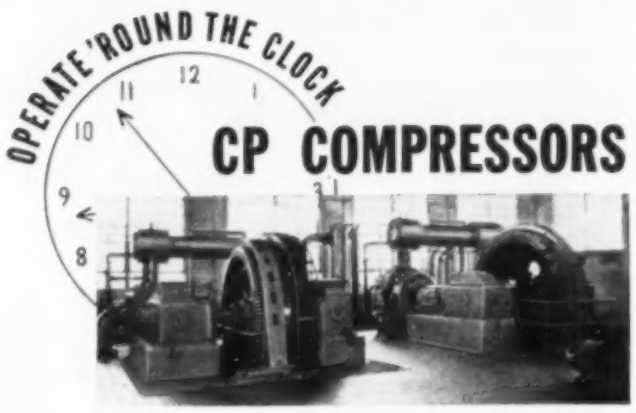
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4645**

There's a storehouse of profitable information in this Tufflex Sample & Specification Kit. Here's the amazing story about a new "man-made" cellulose felt...to help you solve problems of packaging, thermal insulation, vibration, shock absorption, cushioning and padding. Get the Tufflex facts. Investigate Tufflex for increasing production and reducing costs...increasing quality and sales. Write on your letterhead to Wood Conversion Co., Dept. 126-43 First National Bank Bldg., St. Paul 1, Minn.

Keep Your Eyes On... **TUFFLEX***
*REG. U. S. PAT. OFF.

If you write maker identify as **IEN - 4646**



There's no daily time limit placed on the work output of Chicago Pneumatic Class O-CE Compressors . . . they operate "round the clock" with a minimum of attention. Built in sizes up to 2,000 hp and capable of delivering pressures up to 5,000 lbs., they are available in horizontal, two-stage, water-cooled types with direct-mounted synchronous motor drive.

And they're equipped with roller bearings, Simplate valves for low power consumption, CP Multi-Step Control for partial load economy, and a CP Intercooler for maximum heat transfer with low water consumption. Write for Bulletin 726. *Chicago Pneumatic Tool Company, 8 East 44th Street, N. Y. 17, N. Y.*

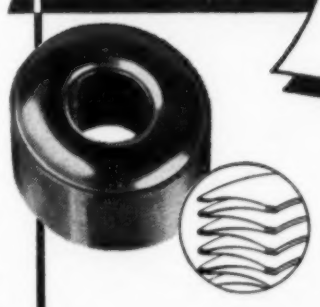
Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as **IEN - 4647**

Can You Use BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties



- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets—in a wide range of sizes and specifications—may prove the ideal solution.

***WRITE TODAY** for complete information, outlining your specific problem or interest.*

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.
ANOTHER BREEZE MARK PRODUCT

If you write maker identify as **IEN - 4648**

This Office Typist is doing the work of 4 Draftsmen...

This girl (who doesn't have and doesn't need, an engineering degree) is daily saving her firm the lettering time of 4 draftsmen. And she's doing a neater, sharper, more legible job of lettering, too!

EASY AS ABC to operate! Standard keyboard works like a typewriter. Wide selection of instantly changeable type faces makes Vari-Typer useful and MONEY-SAVING for other jobs.. setting text type for specification sheets, literature, instruction manuals, etc... which can be duplicated on office machines or offset printing.

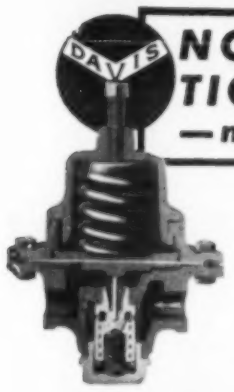
Vari-Typer

Lettering Machine

Body copy produced on DSJ Model. — Headlines photo-composed on the Headliner.

RALPH C. COXHEAD CORPORATION
720 Frelinghuysen Ave., Newark 5, N.J.
Please send me Vari-Typer Booklet 143
NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE...STATE.....

If you write maker identify as IEN - 4649



NON-STICKING! TIGHT CLOSING! —no pressure build-up

DAVIS No. 13

AUTOMATIC PRESSURE REDUCING VALVES

- **FOR MANY USES—**
  No. 13 regulator designed for reduced flow requirements in heating equipment, vulcanizers, molding presses, steam kettles, etc.
- **EXCLUSIVE DESIGN—**
  Single seated, tight closing, non-sticking. Large diaphragm, sensitive pressure adjustment. Compact, rugged, self-contained. Orifice type insures high lift, low maintenance.
- **TROUBLE-FREE SERVICE—**
  Built-in Strainer, finest quality, all internal parts accessible and renewable without disturbing piping.
- **FOR STEAM, AIR OR GAS—**
  For initial pressures to 250 p.s.i.; reduced pressures, 1 to 100 p.s.i. Sizes from ⅜" to 2". Bronze or semi-steel bodies; bronze or stainless trim. Economical for use on small units. *Write for Bulletin 100-A.*

DAVIS REGULATOR CO.
Established 1875
2529 S. WASHTENAW AVE. CHICAGO 8, ILL.

If you write maker identify as IEN - 4650

"TUNED" to Extra Sales

Another Profitable Application of the "Circle B" Synchronous Timing Motor in Electrical Equipment

The new 1953 Westinghouse Electric Clothes Dryer Conveniently Croons "How Dry I Am" when Clothes Are Dry. A Bristol "Circle B" Motor met Westinghouse's need for a completely dependable high torque motor for intermittent duty, to power the Dryer's music box.

Bristol "Circle B" motors are available for 24, 110, or 220 volts, 50-60 cycles; rotation clockwise or counter-clockwise; wide range of standard and special output shafts.

...SO LOOK WHO'S TORQUE KING NOW

POWER – Standard models of the "Circle B" Motor now available range up to 16 in. oz. torque continuous duty and 84 in. oz. torque intermittent duty at 1 r.p.m.

POSITION – This versatile timing motor is precision-built to operate perfectly in any position. No vibration or noise. Efficient Lubrication System.

COMPACTNESS – The "Circle B" Motor is compact – fits into a 2" circle, and is only 1 17/64" deep.

SPEEDS – This motor is made in a wide range of standard speeds – from 1/6 r.p.m. to 1800 r.p.m. Can be made on order for other speeds.

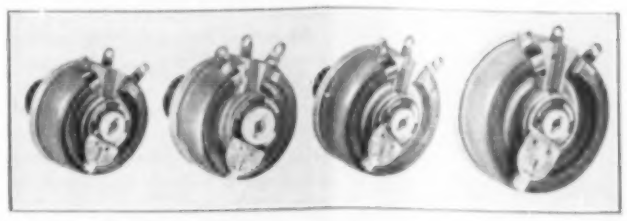
OUR expert engineering staff is available for the development of special motors, or for application to special uses. We will welcome the opportunity to discuss and analyze your particular problem, either at our plant in Old Saybrook or in your own offices. Write for data and price sheets.

CIRCLE BRISTOL
BRISTOL MOTOR DIVISION
VOCALINE COMPANY OF AMERICA, INC
84 Coulter St., Old Saybrook, Conn.

If you write maker identify as IEN - 4652

RHEOSTAT . . Circular design rates 50 to 150 watts in four sizes

Source: HARDWICK HINDLE INC.
30 Hermon St., Newark 5, N. J.



Four sizes in expanded line

The company announces addition of three new sizes, rating 75 to 150 watts, to its Type H-50 rheostats, previously described IEN-3176-52. Each includes a toroidal ceramic form wound with resistance wire and bonded to a refractory base with the company's new blue-gray enamel coating. This enamel is proof against thermal shock. It protects the winding in heavy duty service and under extremes of humidity.

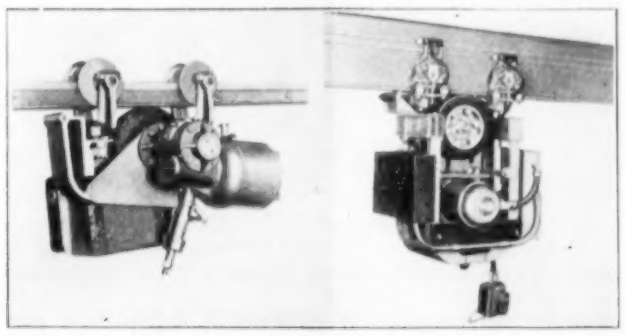
The contact arm applies a bus-bar type of brush to minimize resistance between the element and the collector ring. The arrangement is self-adjusting for positive smooth electric control. Terminals are corrosion resistant alloy. The design conforms with Specifications including JAN-R-22, RTMA, NEMA, and Underwriters' Laboratories.

Resistance range overall is between 0.5 and 10,000 ohms. The smallest in approximately 25 steps, the largest in about 1,000 steps. Overall diameter is 2⅜ in. for the smallest unit and 4 in. for the largest one, measured at the base.

If you write maker identify as IEN - 4653

MONORAIL . . Motor driven tractors designed to move 1 and 5 ton loads

Source: AMERICAN MONORAIL CO.
13111 Athens Ave., Cleveland 7, Ohio



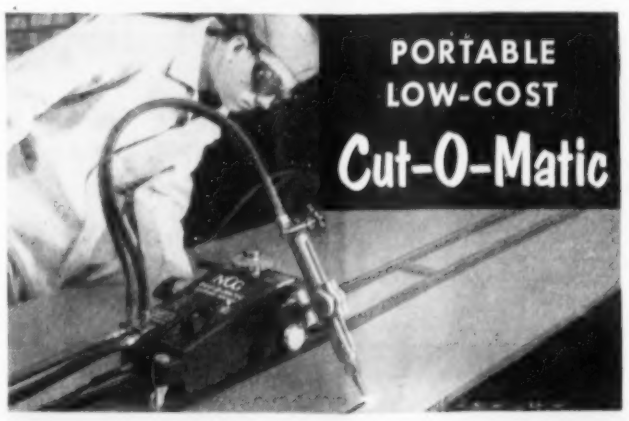
Traction wheel bears on track flange

Load carriers are moved along a monorail track by these new designs of rubber-tired MonoTractor. The light duty unit, to the left, is equipped with a right-angle geared head motor, spring backed hinge frame and rubber-tired wheel measuring 2½ by 8 inches. The wheel bears against the bottom of the track to provide the required traction.

The larger unit, to the right in the illustration, employs a motor chain connected to a rubber-tired wheel measuring 4 by 12 inches. This wheel also bears against the bottom of the monorail track under adjustable spring pressure. The drive in this case can be specified with a fluid coupling. It will handle 5 ton loads without difficulty.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4654



Machine flame cutting for every metal-working shop

Cut-O-Matic is NCG's portable motor-driven track guided machine that brings the advantages of machine flame cutting to shops of any size. It costs only $210.00. It weighs only 50 lbs. Easily carried about the shop, it sets up rapidly and cuts steel plates, stacked steel sheets or heavy slabs so cleanly and accurately no further finishing is necessary in most cases. It cuts square or beveled edges, in straight lines, circles, strips and some irregular shapes. It is so versatile, useful, easy to operate that most shops will speed production, save time, labor, handling and materials. Booklet N-134 tells about Cut-O-Matic. Send for a free copy today.

Copyright 1953, National Cylinder Gas Company

NCG® National Cylinder Gas Company
840 N. Michigan Ave., Chicago 11, Illinois

If you write maker identify as IEN - 4655

I'M FOREVER BLOWING TROUBLES!

I'm a Clements-Cadillac blower-suction cleaner. I keep your machinery clean . . . no troublesome Dirt, Dust, and Grime gremlins will slow down your smooth operation with me around. I'm a cleaning tool that reaches every nook in all types of equipment.

SAVE TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

CLEMENTS CADILLAC

Made in 5 models with attachments for every cleaning job.
PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN - 4656

Something NEW IN WHEELS!

"Non-breakable" Heavy Steel Plate Construction.

"Easy-rolling composition" Molded-On rubber tires. Roller bearings. Finished hub end caps.

DICO COMPANY 202 S.W. 16th ST., DES MOINES, IOWA

If you write maker identify as IEN - 4657

standardize on standard

use it anywhere

HALLOWELL CARRY-TOOL

It's the most convenient carrier in the shop. Use it on assembly lines, at machines, in the toolroom. Use it for inspection, stockroom, maintenance, and mounting small tools. Drawers have ball bearing rollers and padlock attachments. Stocked and sold by industrial distributors. Write for literature. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A GIANT FOR THE FUTURE

HALLOWELL SHOP EQUIPMENT DIVISION **SPS**
JENKINTOWN PENNSYLVANIA

If you write maker identify as **IEN - 4658**

Safety Lesson No. 1

"MISSING LINKS"*
Repair Chains Better

Do away with danger of opening up under heavy load by specifying Laughlin "Missing Links".

Pressure fitting of matched halves with special dies insures perfect fit, eliminates tendency of loose-fitting links to shear.

Links, not rivets, carry the load. Interlocking lugs grip firmer, bear the weight. Ordinary round lugs fitted into round holes don't have holding power.

"Missing Links" are also supplied in an exclusive pear shaped design in sizes for 3/8" to 1 1/8" chain. Free Catalog No. 150 lists full line.

For Safety's Sake . . . Say LAUGHLIN

THE THOMAS LAUGHLIN CO.
*T. M. REG. 41 Fore Street, Portland, Maine

Buy from your local distributor

If you write maker identify as **IEN - 4659**

Electronic Temperature Control

...with Alnor Accuracy

Alnor, pioneer in the field of electronic temperature instruments, brings you automatic, precise temperature control for heat-treating furnaces, bake ovens—in fact, for any heating device whether electrically heated or fuel fired. It's the Alnor Temperature Controller—simple in design and operation, its accuracy proved on thousands of installations in many industries.

Easily and quickly installed, this instrument is ready to give you accurate controller service on new or existing heating equipment temperature—you merely set the pointer at the desired temperature and forget your indicating and controlling problems. But find out for yourself how Alnor accuracy and dependability can serve you in controller service; write today for complete details on the Alnor Temperature Controller . . . Alnor accuracy at a price you can afford. Illinois Testing Laboratories, Inc., Rm. 517, 420 N. La Salle Street, Chicago 10, Illinois.

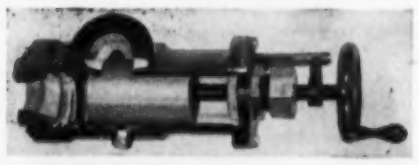
Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as **IEN - 4660**

• Accurate Control of Liquids . . . from a DROP TO A STREAM-

With this proven

ANGLOMER FLOW CONTROL
(U. S. PAT. No. 1754138)



This valve adjusts the flow of viscous liquids by varying the friction. Proved accurate and dependable in commercial use over a number of years. May be used to control the flow of many fluids such as molasses, oil, waste liquids, etc., without danger of passages being clogged. Send coupon for details.

(Manufacturers agents wanted)

ANGLO AMERICAN MILL SALES CO.
Owensboro 10, Kentucky

Please send literature on ANGLOMER Flow Control Valve.

Name ..... Position .....
Company .....
Address .....
City ..... State .....

If you write maker identify as **IEN - 4661**

DRYING . . Refrigerating unit to remove excess moisture from a room

Source: REMINGTON AIR CONDITIONING DIVISION
61 Willey St., Auburn, N. Y.

Ask for Bulletin 531

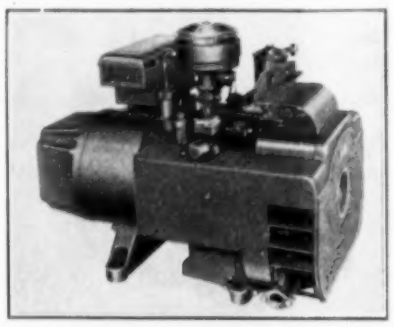
Moisture Magnet trade names a new self-contained motor driven refrigerating unit. It serves as a dehumidifier to remove moisture from the air that it draws in and delivers back to a room. The unit is available with 1 and 1½-hp. hermetically sealed compressors for operation on 220-volt ac. It also can be supplied for operation on 220-volt dc. in which case the unit is not sealed as in the other.

Assembly is in a cabinet measuring about 34½ by 19 by 37½ inches. Shipping weights are 390 and 410 pounds. Both units are recommended for operation at room temperatures between 60 and 110 deg. F. with relative humidity between 40 and 100 per cent. The company has prepared a six-page folder containing instructions to assist a user in selecting and applying the unit or given requirements.

If you write maker identify as **IEN - 4662**

GENERATOR . . Engine driven ac., 5 and 10 kw., for standby and utility

Source: D. W. ONAN & SONS INC.
25th at University Ave. S. E., Minneapolis 14, Minn.



Data sheets on request

Models 5CW and 10CW are new air cooled engine driven generators rating 5 and 10 kw. They are available for output at 110 to 440-volt 60-cycle single and three-phase ac. The smaller unit is driven by a 13-hp. horizontal opposed cylinder engine operating at 1,800 rpm. The larger unit has the same type of engine and the same speed with rating at 20 hp. Engine and generator are direct connected.

Voltatge regulation at the generator is within 5 per cent for the small unit, 3 per cent for the larger one. Frequency regulation is maximum at 3 cycles in both cases. The engines are vacuum cooled by blowers. A single expulsion vent serves for all the heated air and exhaust gases.

Identify as **IEN - 4663**

New compound, containing lead and copper, is available from Cop-Sil-Loy Incorporated to apply on the brake and clutch linings in your trucks and vehicles. It can be brushed on new or old linings where it dries in a few minutes. It produces a mirror-like surface on the linings and the drums, prevents scoring, makes the surfaces water repellent, prevents fade due to overheating, lubricates and stops chattering.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4664**

The Day the Cake Fell!

Just suppose all the nuts, bolts and screws were suddenly removed from a sparkling new range. A great deal more than a cake would fall.

Yes, fasteners *are important*—and worth all the time and care you take in selecting those that are "just right" for your product. Lamson & Sessions is currently supplying most of the appliance manufacturers with bolts, nuts and screws—each type engineered to meet individual requirements.

Regardless of the product you manufacture; it will pay to take a critical look at the fasteners you are now using. Can you save money by replacing a "special" with a "standard"? Or will the use of a "special" simplify production, thereby, saving time and perhaps materials?

Check with Lamson & Sessions—one of the few manufacturers offering a *complete line* of fasteners teamed with expert engineering service.

The LAMSON & SESSIONS Co.
1971 West 85th St. • Cleveland 2, Ohio
CLEVELAND AND KENT, OHIO • BIRMINGHAM • CHICAGO

If you write maker identify as **IEN - 4665**

PORTABLE HOIST
WEIGHS LESS THAN 10 POUNDS WITH A 1½ TON CAPACITY

SPECIFICATIONS

- LITTLE MULE is equipped with 13 feet of 7/32" preformed aircraft cable with a guaranteed single strength of 5,600 pounds. This permits a pull or lift or 6 feet with double cable or 12 feet with single cable. No dangling chain. When cable is rolled on drum it is safely out of the way.
- Lever that controls raising and lowering mechanism is easy to reach, easy to operate. Can be shifted while wearing heavy gloves.
- LITTLE MULE is rated at 1½ tons but has an overload capacity of about 100%. The safety feature is in the 20" handle which is engineered to bend when the hoist is overloaded.
- There are no brakes to slip as the hoist has positive acting, double-interlocking pawls.
- All materials used in the construction of LITLE MULE are corrosion proof or highly corrosion reistant.

LITTLE MULE
IT LIFTS . . . PULLS . . . LOWERS

For complete information write . . . . .

LITTLE MULE CORP.
661 S. W. 2nd Ave. Ft. Lauderdale, Fla.

If you write maker identify as **IEN - 4666**

FOSTER
Chrome Sleeve Quick Detachable
COUPLERS
AND HOSE FITTINGS

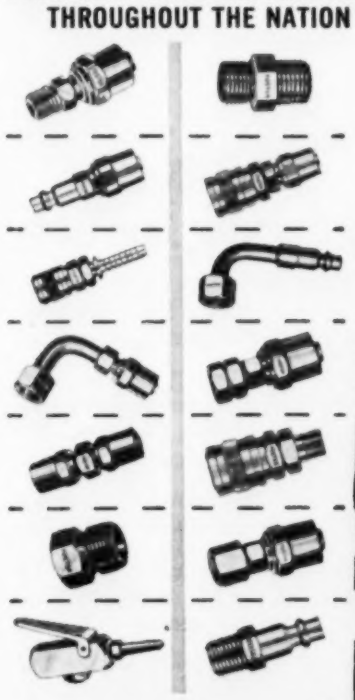
Price...Lower than most
Quality...None Better
Delivery...Immediate

- Reusable Socket Heads for Lower Replacement Cost!
- One Second Hookup Under Pressure!
- Tight-Seal, Dirt-Proof Construction! Leak-proof!
- Instant Automatic Flow! Swivel Action!

Foster Quick Detachable Couplers for pneumatic and hydraulic applications give longer service and cost less than other comparable couplers. Delivery of any order, large or small, is immediate. An order to Foster is faster. Write Dept. 3.

FOSTER MFG. COMPANY, INC.
2850 Gravois • St. Louis 18, Mo

FOSTER FITTINGS ARE AVAILABLE THROUGHOUT THE NATION



Send for *Free* CATALOG

ASK US WHY WE RECOMMEND

If you write maker identify as **IEN - 4668**

2500 P.S.I. THREE SERIES OF **30" VAC.**

MERCOID DA PRESSURE CONTROLS

PROVIDE THE SENSITIVITY YOUR APPLICATION REQUIRES

- FULLY ADJUSTABLE AS TO RANGE AND SENSITIVITY
- BOURDON TUBE OPERATED
- VISIBLE CALIBRATED DIAL
- MERCOID SEALED MERCURY CONTACT

There is a Mercoid DA Pressure Control for your particular application in pressures varying from 30" vacuum to 2,500 p.s.i. (available in many different circuit arrangements).

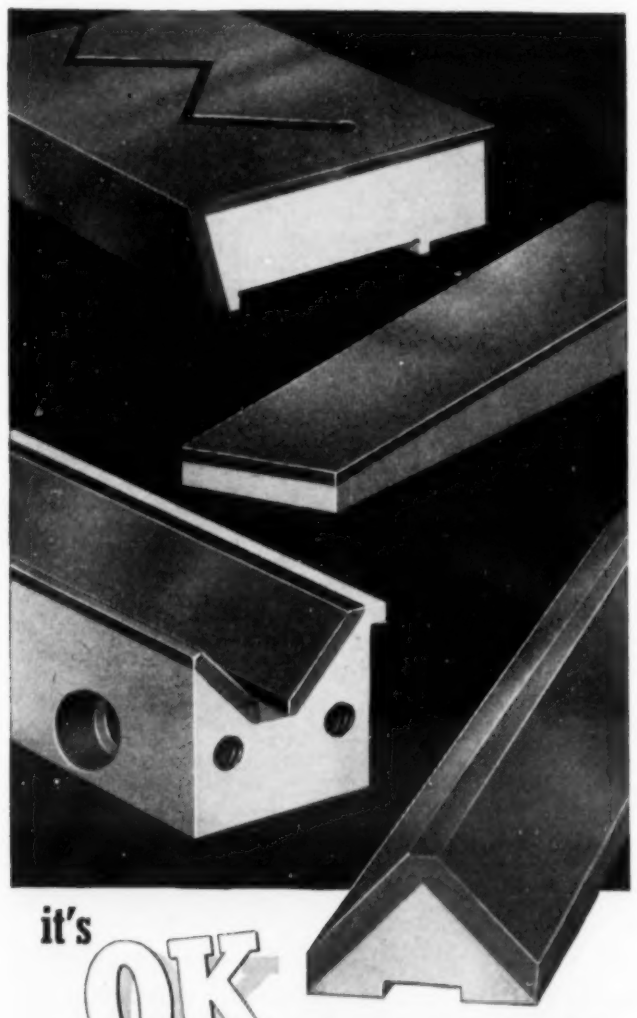
Apart from bourdon tube operated pressure controls, Mercoid offers a line of bellows and diaphragm actuated controls.

Explosion-proof and weather-proof cases are adaptable to practically all series.

If you have an automatic control problem involving the control of pressure, temperature, liquid level or mechanical movement, write for Catalog No. 700A.

THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO, ILL
NEW YORK: 205 E. 42nd ST. • PHILADELPHIA: 3137 N. BROAD ST

If you write maker identify as **IEN - 4669**



it's OK let'em go with OK hardened ways, gibs, ball races, and Ampco bronze wear strips

The ultimate success and accurate life of your machine depends largely on the accuracy, and uniform high hardness of its ways, gibs, ball races or wear strips. OK parts are the finest. Made of special tool steel welded to a backing of soft tough steel under 2500 tons pressure, then hardened to a Rockwell C-65-66 and ground to tolerances of ± .00015 (both straight and parallel). Available in all sizes and shapes, to meet your particular requirements.

OK wear strips are also available in welded Ampco bronze. Because of the OK's special bi-metal method of welding, less bronze is required. Ways are ground to close tolerances thus reducing manufacturing and assembly time.

Manufacturers for the Metal Working Industry of Slitter Knives, Shear Blades, Rotary Shear Knives, Hardened Spacers, Hardened Ways, Gibs, Ball Races, Bronze Ways, and Wear Strips.

Write Dept. J for Bulletin

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as **IEN - 4671**

TESTING . . Electrical instrument checks condition of electronic tubes

Source: HICKOK ELECTRICAL INSTRUMENT CO.
10544-48 Dupont Ave., Cleveland 8, Ohio

For shop and field

Three models are available in the company's new Series-533 tube testing instrument with which electronic tubes can be checked under simulated operating conditions. Included is a new test feature to forecast future life of a tube. The instrument applies on standard, miniature and sub-miniature tubes.

Model AP is assembled in a portable case with a detachable cover with overall dimensions measuring about 18½ by 7½ by 17 inches. It operates on 110-volt ac. and weighs 24 pounds. Model AC is assembled in a steel case with a polished aluminum handle for laboratory use. It measures about 18½ by 17½ by 6 in. and also weighs 24 pounds. Model AD stands upright. Its dimensions are 17 by 11 by 18¼ inches.

If you write maker identify as **IEN - 4672**

STRAPPING . . Conveyor section provides a station to strap containers

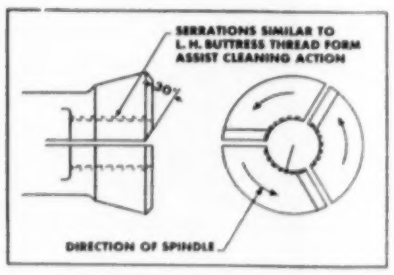
Source: METZGAR CO.
417 Douglas St. N. W., Grand Rapids 4, Mich.

For a packaging line

Banding Helper is a new roller conveyor section in which are cross and longitudinal channels to insert strapping under a container. The side-to-side channel includes a vertical deflector to bring the strap up for top closure. The longitudinal section feeds from below to place the strap, also for top sealing. The conveyor is available in specified size and load capacity to fit in an existing conveyor line.

Identify as **IEN - 4673**

Inclined planes at 30 deg. on the following edges, and serrations in the jaws, act to keep dirt and chips out of the recently improved Sheffler Collet Company's line of work holding collets. The angular surfaces repel the dirt while the collet is revolving.



The design is an outcome of experience with various designs to overcome the dirt gathering tendencies of standard collets.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4674**

now an improved E-6010

the new MUREX® type R

Welders like it!

Murex now gives you the first real improvement in Type E-6010 electrodes in many years.

A completely redesigned electrode, the new Murex Type R welds with less spatter—digs deep without undercutting—does not spear—takes higher currents with no sacrifice in performance—has outstandingly uniform arc action.

Physical properties too, are excellent—more than you'll ever need in E-6010 applications.

Ask for detailed data—request a demonstration—see how this new, improved TYPE R can give you better, faster welding—how easy it is to use.

- DETINNING
- THERMIT WELDING
- METALS & ALLOYS
- ARC WELDING—Materials and Equipment
- CHEMICALS and ANODES for Electrotinning
- CERAMIC OPACIFIERS
- STABILIZERS for Plastics
- TIN, ANTIMONY and ZIRCONIUM CHEMICALS

METAL and THERMIT CORPORATION
100 East 42nd Street • New York 17, N. Y.
Murex Electrodes • Arc Welders • Accessories

If you write maker identify as **IEN - 4675**

Now! **a really SAFE high pressure steam hose**

Quaker IRONSIDES STEAM HOSE

Safer! Glass for insulation, steel wire for protection. Withstands high pressures—saturated steam to 200 lbs., superheated steam to 388° F.

Stronger! Tremendous strength is obtained by the combination of steel wire braid and glass cord. Firmly bonded, tube will not separate or collapse.

Easier Handling! Lighter weight, greater flexibility assure greater handling ease. Kinkproof!

A QUAKER *exclusive!* Real insurance against the hazards of bursting. An ideal combination of high insulation and toughness. COSTS NO MORE than wrapped fabric hose. Carried in all branch stocks. Call or write for full details today.

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
Dept. E. Philadelphia 24, Pa. • Branches in Principal Cities

If you write maker identify as **IEN - 4676**

THESE NEW GUARDIAN RELAYS PROVIDE MORE POWER FOR ANY COMMUNICATIONS SYSTEM

Power increasing—space and weight saving—Guardian Series 595-P and 695-P Communications Relays feature: (1) New, improved field piece with enlarged end adjacent to armature which reduces magnetic reluctance of hinge gap; (2) Armature pivots on stainless steel pin bearing, resulting in minimum friction and maximum utilization of power; (3) Magnetic circuit efficiency assured by use of correct combination of winding to core size for sensitive or power types.

Series 595-P carries up to 4 P.D.T., weighs (D.P.D.T.) 2.5 oz. Series 695-P carries up to 6 P.D.T., weighs (D.P.D.T.) 3.5 oz. Both units available *hermetically sealed* to MIL-R-6106. Write.

Series 595 D. C.

GUARDIAN ELECTRIC
1620-D W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as **IEN - 4677**

standardize on standard

HALLOWELL SOLID STEEL COLLARS

Buy standardized, precision-made HALLOWELL Steel Collars from your distributor's stocks. You'll save time and money by picking up the telephone and placing your order. Deliveries are prompt.

42 stock sizes—for shafts from 3/16" to 3" diameter, inclusive—all positively positioned on the shafts by UNBRAKO Self-Locking Socket Set Screws, the screws that won't work loose.

Write for literature, and the name and address of your nearest HALLOWELL industrial distributor. SPS, Jenkintown 14, Pa.

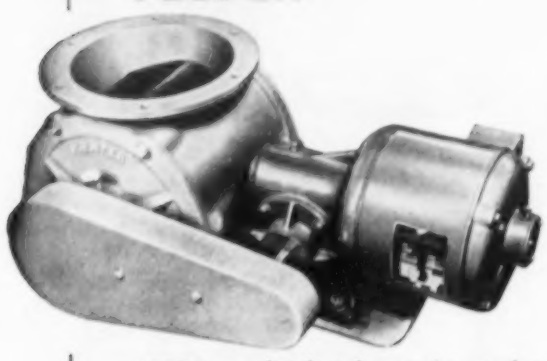
Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL POWER TRANSMISSION DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as **IEN - 4678**

PRATER ROTARY AIRLOCK FEEDER



FEEDS powdered and granular products into conveying line—quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as **IEN - 4679**

ready to use **FLINTZ**
(FLINTY HARDNESS)

HARD RESURFACER FOR CONCRETE

- "Roll a truck a foot on FLINTZ ▪▪▪ and it will coast another!"
- The ONLY PREPARATION for placing Flintz is CLEANING THE FLOOR ▪▪▪ without cutting.
- Placing Flintz is LIKE SPREADING MOIST SAND.

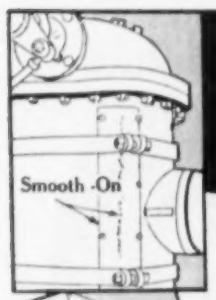
Some concerns have used thousands of bbls. of our resurfacers—just finished placing a 350 bbl. order for a world-wide concern—and would be de-lighted to furnish materials or install for you at your option.

"KEEP 'EM ROLLING"

Write today for FLINTZ booklet, "Keep 'Em Rolling" for full details, or address inquiries to:

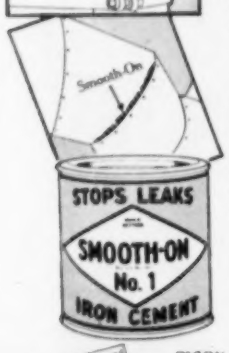
DURA-TRED CO. SINCE '38
349 N. CENTRAL PARK BLVD • CHICAGO 24, ILL.

If you write maker identify as **IEN - 4680**



Repairs both Cast and Sheet Metal

The quick-hardening, fast-clinging, temperature-resistant properties of Smooth-On No. 1 Iron Cement make it just right for countless repairs in industrial plants, shops, homes. It seals cracked castings, stops leaks in breeching, tightens loose rivets, bolts, screws and machine parts. Does not require use of heat or "gadgets." Any handy man can use it successfully. Buy Smooth-On No. 1 in 1-, 5- or 20-lb. size and keep it handy. If your supply house hasn't Smooth-On, write us.



FREE Famous Repair Handbook

Now in its 28th edition, this 40-page fully illustrated, pocket-size manual shows many short-cut, time-saving, money-saving repairs to machinery, equipment, pipe lines, etc. Drop us a line for YOUR free copy.

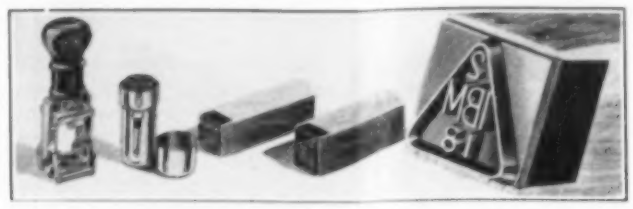
SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.
50-292

Do it with **SMOOTH-ON**
THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as **IEN - 4681**

MARKING . . Vinylite stamps, standard, special, to replace rubber

Source: KRENGEL MFG. CO.
227 Fulton St., 2nd Floor, New York 7, N. Y.



Design assistance is available

The company announces general availability of its new line of Vinylite engraved plastic stamps in both standard and specification sizes, type faces and logotypes. The plastic is inert to acid etching inks such as those employed to mark metal and other non-porous surfaces. The stamps also are resistant to attack by petroleum solvents or greases. The engraved characters and designs will produce sharp impressions. There is sufficient resilience in the material itself to conform to irregular surfaces.

If you write maker identify as **IEN - 4682**

STORING . . Steel sectional cabinet with pairs of compartment drawers

Source: AURORA EQUIPMENT CO.
420-24 Cleveland Ave., Aurora, Ill.

To hold small parts

Illustrated are three sections of the new Little Gem steel storage cabinet. Each contains two drawers measuring 11 by 11 by 1¼ inches. Each drawer contains a maximum of 28 adjustable compartments enclosed on all four sides and the bottom. Tiny parts cannot slip out, become damaged or jam the drawer. The front of the compartments is curved to assist in taking out small parts. Overhang at the rear holds the parts in place when the drawer is pulled open quickly or slammed shut. A label holder identifies each compartment.

Identify as **IEN - 4683**

Spent pickle liquor, coming from the acid baths employed to descale steel, can be treated in a new process that answers the disposal problem. Blaw-Knox Company is the information source. The spent liquor is concentrated by evaporation. The ferrous sulfate is then converted to ferrous chloride by absorption of hydrogen chloride. The precipitated ferrous chloride is removed by centrifugal action. The regenerated sulfuric acid is returned to the pickling tanks. The ferrous chloride is roasted to produce hydrogen chloride for recycling to the process. Iron oxide is returned to the steel furnaces. An installation to handle the spent liquor from 10,000 ton of sulfuric acid in a year would cost about $500,000.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4684**

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

"MX" ABRASIVE PRODUCTS . . . Versatile, fast-cutting, self-cleaning, safe, long-lasting

"MX" abrasive products by CARBORUNDUM do such varied jobs as reducing and blending stainless steel welds in one operation . . . cleaning out dainty designs on sterling silver . . . cutting through one inch black pipe in seconds.

Fast-cutting, they finish as they cut. The special "MX" bond provides "cushion action"—reducing vibration and giving a smooth, uniform finish.

Self-cleaning. "MX" abrasive products cut clean . . . resist loading even on soft metals, such as aluminum, or on plastics, glass and other non-metallics.

Safe—they resist impact and heat shock. They operate efficiently, safely—on portable or stationary equipment.

Long-lasting—"MX" abrasive products remain usable right down to the arbor, shank or nut.

"MX" abrasive products come in seven useful forms: straight wheels, mounted wheels, sticks, depressed center wheels, discs, general purpose cut-off wheels, and production cut-off wheels.

Get full information from your CARBORUNDUM distributor today. Or send for your free copy of "MX Products" by circling the inquiry number—or write to us, addressing Dept. IEN 81-310.

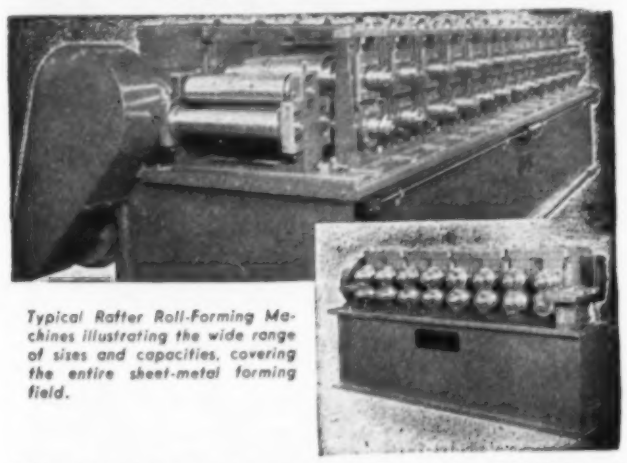
"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as **IEN - 4685**

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency

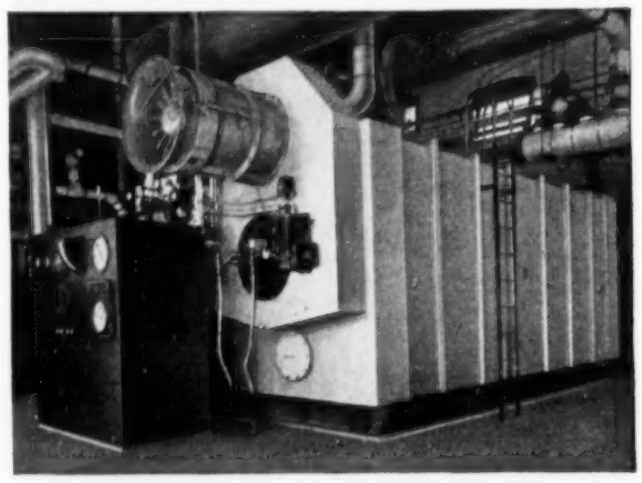


Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

If you write maker identify as **IEN - 4686**



Popular Choice for "Packaged" Steam

The shop-assembled B&W Integral-Furnace Boiler, Type FM, has gained industry-wide acceptance. Prominent companies in over 50 different industries, along with numerous utilities, educational institutions, hotels, hospitals, housing projects, office buildings, and government agencies, have already selected this compact, self-contained steam generating unit for installations in 34 states, three U. S. territories and five foreign countries. Total steam capacity of units now in service and on order exceeds 5½ million pounds per hour. Nearly half of this capacity consists of multiple-unit applications of FM boilers instead of single larger-capacity units.

This recent B&W creation in low-cost steam generation is available in standardized sizes for loads of 2900 to 28,000 lb. per hr. at steam pressures to 250 psi.

Send for Bulletin G-76 describing and illustrating the many cost-saving features of this popular boiler. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd St., New York 17, N. Y.

BABCOCK & WILCOX

G-573

If you write maker identify as IEN - 4688

SENTINEL

SMALL DIAMETER **GLASS PIPE and FITTINGS**

STOCK SIZES AND LENGTHS: Small Diameter Sentinel Glass Flanged Pipe in 1/4", 3/8", 1/2", and 3/4" sizes. Straight lengths to 72"; can be supplied longer if required.

Sizes larger than 3/4", in Bulletin EA3—Pyrex Double-Tough Glass Pipe and Fittings.

Pipe and Fittings are fabricated from Pyrex Brand Glass Tubing. Corrosion-resistant against all chemicals and combinations of chemicals except hydrofluoric acid and hot concentrated alkalies. Low coefficient of expansion, gives remarkable ability to withstand thermal shock.

Normal operating temperatures up to 250°F. to 450°F. if precautions are taken. Pressures to 100 psi.

FITTINGS: 45° and 90° Elbows, Tees, U-Bends, Crosses, etc. Special Fittings to your specifications.

GASKETS: TEFLON, Asbestos, Gum Rubber, Neoprene, Koroseal.

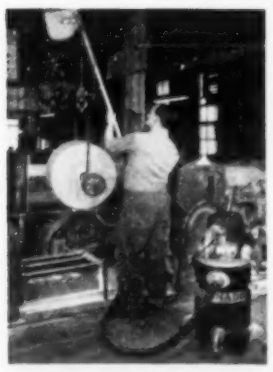
NEW—PYREX GLASS TRAPS in all sizes, for drain and waste lines

SENTINEL GLASS CO. HATBORO, PENNA.

Send for Bulletin SG 11

If you write maker identify as IEN - 4689

Housekeeping Headache *Takes a Powder* when TORNADO® goes to work



Overhead Too

Lightweight tools simplify cleaning of overhead fixtures and equipment.

The Standard Packaging Corp., Chicago, uses a fine drying powder in printing millions of foil milk bottle closures every day. This powder leaves a fine, dust-like deposit on their presses, floor and overhead fixtures.

To beat their housekeeping problem, Standard puts Tornado to work. Air rushing through this cleaner at more than 300 m.p.h. supplies plenty of powerful vacuum. This means faster, more thorough pressroom cleaning—and reduced maintenance costs.

If you have a problem with dirt, dust, chips, water or oil in your plant, find out how Tornado can clean things up—boost production by improving working conditions, efficiency and morale.

WRITE FOR YOUR COPY OF BULLETIN 600

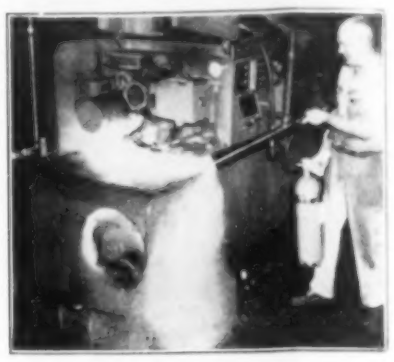
BREUER ELECTRIC MFG. CO.

5108 NORTH RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

If you write maker identify as IEN - 4691

EXTINGUISHING . . Portable unit, rechargeable with carbon dioxide

Source: WALTER KIDDE & CO.
673-77 Main St., Belleville 9, N. J.



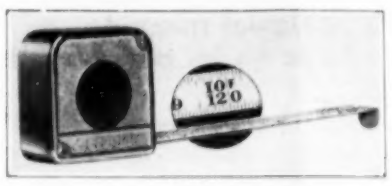
Squeeze type valve

Fyre-Freez is a new portable carbon dioxide hand extinguisher for use on Class B and C fires in flammable liquids and in electrical equipment respectively. The gas discharge reduces oxygen in the fire area so it will not support combustion within seconds after a safety pin is pulled and the extinguisher action is started. The inert gas is clean, non-corrosive and non-conductive. Five extinguisher sizes range from 2½ to 20 pounds.

If you write maker identify as IEN - 4692

GAGE . . Flexible steel rule stands rigid in extended position

Source: ATLAS WELDING ACCESSORIES CO.
705-9 E. Lewiston St., Ferndale 20, Mich.



List is $3.25

Chief is a new 10-ft. spring retracted flexible rule designed particularly for use by welders. It reads accumulated inches and feet in black markings on a white surface. A brake in the spring equipped housing holds at any extended point. The rule is retracted into the housing when the brake is released.

If you write maker identify as IEN - 4693

RELAY . . Mercury plunger design, magnetic action, 35 amp., 110 volt ac.

Source: PHILADELPHIA SCIENTIFIC GLASS CO.
5 Eckard Ave., Abington, Pa.

No sparking

A solenoid coil surrounds the mercury tube in this new Type PR-5 relay. It operates on 110-volt 60-cycle ac. When the coil is energized, in the normally open design, the plunger is drawn down into the mercury contained in the sealed tube. This raises the liquid level and makes mercury to mercury contact to close the circuit. Opening the coil circuit releases the plunger which floats upward in the mercury to break the contact. List price is $9.50 to $13, depending on design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4694

BAR-L* VAPOR DEGREASER

Economical, Trouble-Free, Parts Cleaning!

* Patent Pending

Bar-L Vapor Degreaser cleans all metal parts, removes sludge, grease, dirt in seconds! And your parts come out warm and dry.

So designed that the heating element is in no danger of damage from dropped parts or insulated by settled residues. Bar-L Degreaser cleans anything that will fit into the solvent drum!

Economy of operation is assured by a record of trouble-free service. Almost 100% recovery of the solvent is made possible by the design of the condenser which returns the solvent to the boiling chamber. Continuous, high production is a fact with Bar-L!

If your requirements indicate tanks larger than the standard 55 gallon drum, several units may be used together in larger tanks.

Literature on standard degreasers and information on custom machinery is yours for the asking.

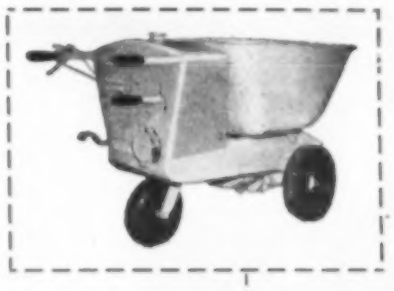
Write or wire today!

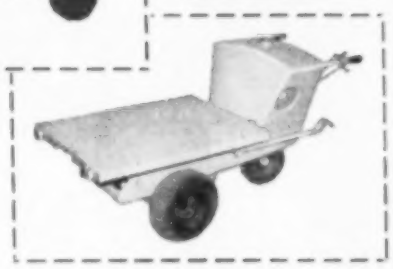
Manufacturers Processing Co.
METAL CLEANING CHEMICALS AND EQUIPMENT
1360 HILTON ROAD DETROIT 20, MICHIGAN

If you write maker identify as IEN - 4695

BULK HANDLING

Bell PRIME-MOVER





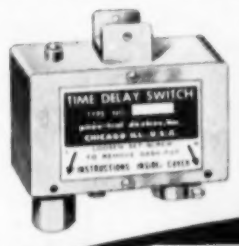
Bucket and Platform interchangeable in a jiffy. Handle up to ¾ ton load — up grades and down — through narrow aisles and doorways.

MOVE your materials — bulk or packaged — with equipment not limited to specific jobs—consolidate those intermittent handling jobs, outdoors or in confined areas—supplement and relieve your specialized equipment and complete the mechanism of your materials handling.

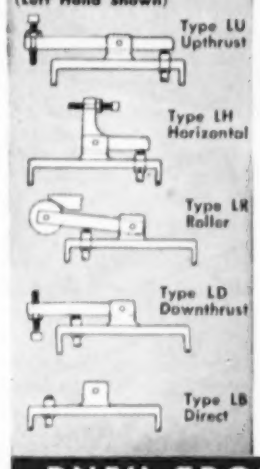
If you're processing bulk materials—disposing of waste and scrap—using materials in maintenance or construction—shifting heavy maintenance equipment—maintaining grounds—or loading, unloading bulk or packaged goods from cars, toss your problems on the Prime-Mover and get the job done—quickly and economically. Prime-Mover Co., Muscatine, Iowa.

If you write maker identify as IEN - 4696

NEW CYLINDER TIME DELAY CONTROL SWITCH *INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER*

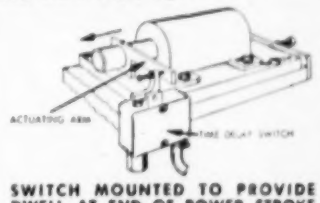


For Any Type Actuation Left or Right Hand (Left Hand Shown)



Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between 1/4 and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed—a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, metal-cutting, etc. Ideal for automatic feeders.

Dimensions: 4⅛" wide; 2⅜" high; 1-7/16" deep. Overall height 4⅛".



SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

Write for descriptive literature and complete details.

PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 4697

they're SELF-LOCKING

IN ANY POSITION

on a threaded member

FLEXLOCS stay put in any position on a bolt or stud the moment the locking threads are fully engaged; they do not have to be seated. And FLEXLOCS stay tight, no matter how severe the vibration; are one piece, all metal; can be used repeatedly. One nut covers a temperature range up to 550°F. See your local industrial distributor for literature and samples or write SPS, Jenkintown 14, Pa.

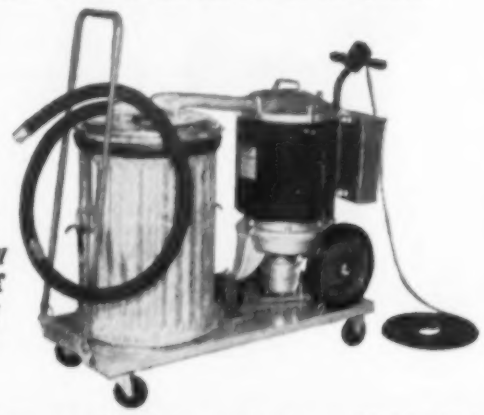
Our Fiftieth Year : A START FOR THE FUTURE

FLEXLOC LOCKNUT DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as **IEN - 4698**

KENT presents a sturdy truck to carry the Kent Suction Cleaner and extra dirt receptacle



Large Capacity for WET or DRY work!

With this arrangement, large capacity is provided for both dirt or liquids. Automatic shut-off valve operates when both tanks are full of liquid . . . none can enter fans or motor! Vacuum Cleaner and 27 gallon tank are installed on truck in a jiffy and easily removed fithout tools, so that vacuum cleaner can be used in small areas when required.

Full information upon request

Our 40th Year — Serving the World with Quality Equipment

CLEAN WITH KENT EQUIPMENT

The KENT Company, Inc., 437 Canal St., Rome, N. Y.

If you write maker identify as **IEN - 4699**

New Hunter Industrial Fan

POWERFUL, LOW-COST VENTILATION

FEATURES:

- **Streamlined orifice for efficient air entrance**
- **Aluminum alloy blades—non-rusting, non-crystallizing, non-overloading**
- **"Gull Wing Design" airfoil blades for strength and uniform pressure**
- **Effective up to ½ in. static pressure**
- **Heavy continuous-duty motor**
- **Permanently lubricated and sealed for life**
- **Direct-drive for reduced maintenance costs**
- **Automatic shutters to fit all fan sizes**

Hunter — Since 1886

CLIP AND MAIL NOW FOR COMPLETE DATA

Hunter Fan & Ventilating Company
375 S. Front St., Memphis 2, Tenn.
Send complete information on Hunter Industrial Fan to:

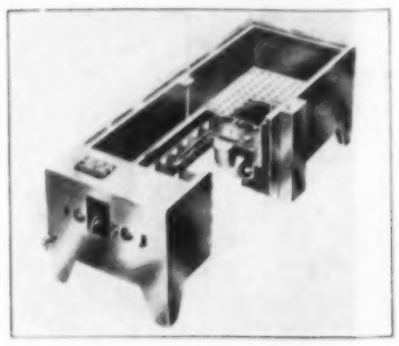
Name _____

Address _____

If you write maker identify as **IEN - 4701**

TESTING . . Hot water bath holds set temperature to 100 deg. C.

Source: **BLUE M ELECTRIC CO.**
304-10 W. 69th St., Chicago 21, Ill.



Meets NEC specifications

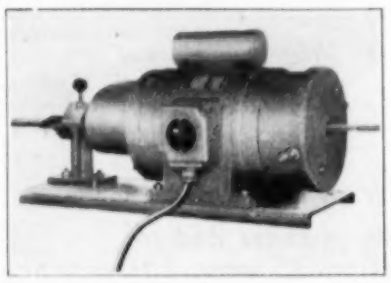
Patent is pending on the company's new Magni-Whirl utility water bath. It is available in four sizes with work space at 12 to 36 in. in length, 7½ to 18 in. in width and 7½ to 9½ in. in depth. Heat is supplied by Modella tubular electric elements extending the length of the work chamber. Construction includes a power selector switch, insulated double-wall stainless steel housing, enclosed wiring.

Feature in the unit is the magnet operated perforated agitating plate. It is pulled down and moved upward periodically by the magnet action to provide gentle agitation in all areas of the liquid. It will hold any temperature from ambient to 100 deg. C. within 0.25 degree. The assembly is completed by an automatic dual Microtrol that selects and repeats the two most used temperatures.

If you write maker identify as **IEN - 4702**

WOODWORKING . . Dowel machine mounts ¼ to ¾ in. cutter head

Source: **VICTOR J. KRIEG INC.**
611 Broadway, 1st Floor, New York 12, N. Y.



Made in Europe

Wood pieces, square in section, are fed into one end of this new Gnom machine to produce circular section dowels on which a cross-hatched surface alternates with narrow smooth intervals. These intervals permit equal distribution of adhesive in the crevices in the cross-hatched sections when the dowel is pressed into place in a wood assembly. The machine is motor driven and designed so the work feeds through its center. Interchangeable cutter heads will produce dowels from ¼ to ¾ in. in diameter at 700 to 1,000 feet per hour.

Identify as **IEN - 4703**

Thirty-six manufacturers in Kingston, Pa. wanted to know more about carbide tools and their application and maintenance. They backed a program through their Borough School District with the aid of Carboloy Department of General Electric Company. A night school clinic was set up for adults employed in the local industries to attend two night classes a week. Carboloy supplied a series of educational films. Some 200 individuals attended. Carboloy will be happy to help you set up similar classes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4704**

CONSIDER WING

STEAM TURBINES

AS MOTIVE POWER

TO OPERATE
COMPRESSORS
GENERATORS
FANS
PUMPS
BLOWERS
WINCHES
MIXERS
ETC.

HERE ARE SOME ADVANTAGES:
VERSATILE—An infinite range of speeds
DEPENDABLE—Independent of electric power failures
ECONOMICAL—Cost little or nothing to operate if exhaust is utilized
NO SPARKS—For use in explosive or inflammable atmosphere
SMOOTH ACCELERATION OR DECELERATION—Can be smoothly acclererated or slowed down to meet the need of process, pump, fan or other driven apparatus.

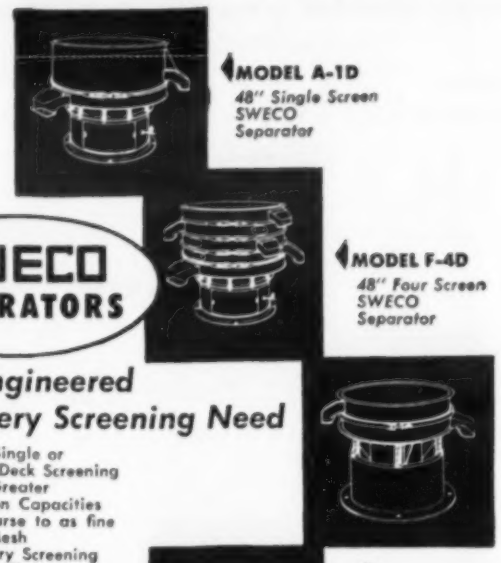
OPERATING RANGES
H. P. to 150
Pressures to 600
Back Press to 50
Temp. to 750°
Speeds to 4000 RPM

Wing Steam Turbines have been serving industry for over half-a-century

Write for Bulletin SW-1a

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N. J.

If you write maker identify as **IEN - 4705**



SWECO SEPARATORS

... are Engineered for Every Screening Need

- Efficient Single or Multiple Deck Screening
- Proved Greater Production Capacities
- From Coarse to as fine as 325 Mesh
- Wet or Dry Screening
- Low Cost Operation
- Unit Completely Self Contained with only Three Moving Parts
- Readily Adjustable Horizontal and Vertical Motion
- Clamp Ring Insures Rapid Screen Cloth Changes
- No Special Foundation, Supports or Base Required for instant Production
- Production Separation with Laboratory Accuracy

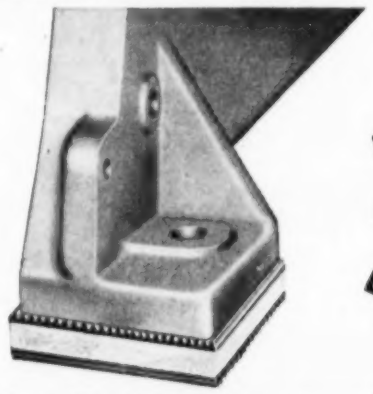
Both Standard and Custom-Engineered Models Available

Write now for new 8-page catalog

SWECO **SEPARATOR DIVISION**
SOUTHWESTERN ENGINEERING CO.
4800 Santa Fe Ave., Los Angeles 58, Calif.

If you write maker identify as **IEN - 4706**

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



NO BOLTING
NO CEMENTING
LOW COST

Elasto-Rib effectively stops transmission of vibration and noise by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-701 and free sample.

THE KORFUND COMPANY, INC.

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-35 E. Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

If you write maker identify as **IEN - 4707**

Get these facts!

ON QUICK, EASY PRODUCTION OF NYLON MAINTENANCE PARTS FROM POLYPENCO® NYLON ROD . . . STRIP . . . TUBING

These bulletins give full information on POLYPENCO nylon standard shapes. Cite examples of how to get *all* the advantages of nylon for maintenance parts by fabricating from standard shapes.

- **Standard shapes (rod, strip, tubing)**
- **Formulation and characteristics**
- **Available sizes and length**
- **Recommended machining practice**

CLIP AND MAIL COUPON NOW!

Polymer Corporation of Penna., Reading, Penna.
Please send full technical and fabricating data ☐
rod, strip and tubing prices ☐

NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(Please print)

If you write maker identify as **IEN - 4708**

They Don't Know it...

but "Folded-and-Formed" Heating Elements probably played an important part in producing that "Western" they're watching!

TRENT PATENTED "Folded-and-Formed" HEATING ELEMENTS

Specified by leading Television manufacturers for ovens used to anneal the tubes. A typical installation is shown at right—"Folded-and-Formed" racks on both walls of continuous Television Tube Annealing Oven.

What is your heating problem? "Folded-and-Formed" may prove to be the *right* solution. Send for details.

STANDARD RACKS—12" x 12" —1.5 to 7.5 K. W. — arranged to give any required total K. W.

CUSTOMBUILT RACKS — Sizes up to 600 K. W. in one bank — temperatures up to 1350° F.

TRENT INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA

If you write maker identify as **IEN - 4709**

IMPORTANT NOTICE *to ALL USERS of* INDUSTRIAL FILTRATION EQUIPMENT

Substantial cost savings and improved filtration efficiency now possible in many industries!

New, dry filtration materials and new methods of using them have opened the way to better filtration. In some cases, this involves the application of synthetics such as nylon, orlon, dynel and dacron. In others, cotton fabric is the most satisfactory material.

Find out more about how you can improve dry filtration in *your* plant if you are involved in industries like these (or others where dry filtration is used):

SMELTING	COAL CLEANING
CARBON BLACK	ASBESTOS
PAINT OR PIGMENT	WOOD WORKING
CHEMICAL	MILLING
FERTILIZER	

FREE INFORMATION!

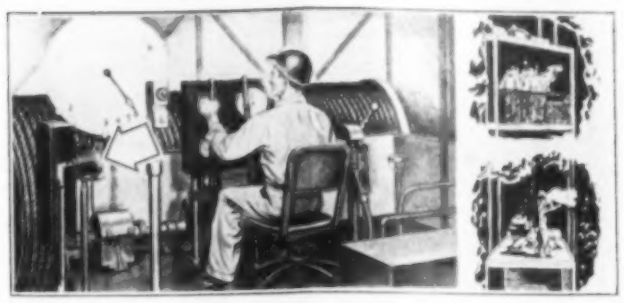
Whitehouse Products (one of the largest users of industrial nylon) has set up a new Filtration Technical advisory service. Tell us your problems with your present filtration equipment and get more details on how to reduce your dry filtration costs. Write on your business letterhead—

WHITEHOUSE PRODUCTS, Inc.
360 Furman St., Brooklyn 2, N.Y.

If you write maker identify as **IEN - 4711**

COMMUNICATING . . Telephone connects operator and elevator cage

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.



Ask for Bulletin 1601-3

HoistPhone is new two-way telephone equipment, operating on frequency modulated carrier principle. It installs between a remote operating engineer and the cage in an elevator such as a mine hoist or the materials handling elevator on a construction job. The equipment takes the place of audible and visual signals.

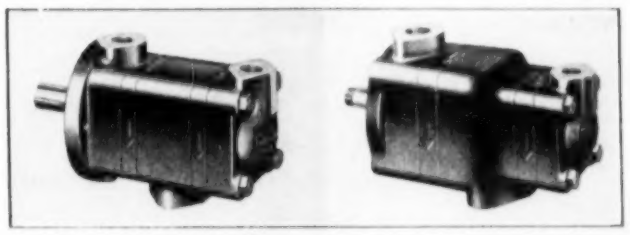
Voice signals can be transmitted instantly to the engineer to warn of shaft or cage damage or to "talk" the cage to a flush landing. An inspector can ride the cage top, with a hand microphone, to instruct the engineer while he checks conditions at desired points in the shaft.

Installation can employ existing wiring, the elevator cable, the shaft frame, to carry the signals. Continuous voice communication can be maintained while the cage is standing or in motion and can be heard distinctly over equipment noise.

If you write maker identify as **IEN - 4712**

PUMP . . Vane type hydraulic assembles two pumps on a common shaft

Source: VICKERS INC.
1398 Oakman Blvd., Detroit 32, Mich.



Designed to handle hydraulic oil

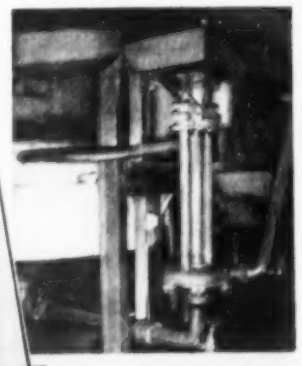
Series V-2200, to the left in the illustration, and Series V-3200, to the right, are new double pump assemblies in the company's line of mobile hydraulic equipment. Series V-2200 is available in ten sizes with any combination of 2, 5, 8 or 11-gpm. units. Series V-3200 is made in 16 sizes with a choice of 2 to 11 gpm. at the small end and 12 to 24 gpm. at the large end. Splined, threaded or straight keyed shafts and face, flange or foot mounting can be specified.

Each pump, in the double assembly, is an independent unit and can be employed to serve its own hydraulic circuit. Both pump assemblies are particularly suited for built-in application in materials handling equipment and in road and construction equipment. Approximate overall length is 10¾ and 12¾ inches. Inlet is threaded for 1¼ or 2-in. pipe. The outlet is for ½-in. pipe on the small size and 1-in. pipe on the larger.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4713**

This NEW *Nagle* "TV" PUMP is NO "WALLFLOWER"



IT'S prim and clean, and designed to mount on wall or side of a tank or sump, but it's no "wallflower." You'll find it in the thick of things! A single stage, bottom entrance, vertical shaft, dry pit pump for handling abrasive mixtures and corrosive liquids and slurries —pumps anything that will flow. The Nagle type "TV" gives you:

- **Freedom from leakage --- Clean floors assured**
- **No stuffing box**
- **No submerged bearings**
- **Sizes from ¼" to 10"**
- **Capacities to 4,000 g.p.m.**

V Send for Bulletin "TV"

NAGLE PUMPS

NAGLE PUMPS, INC.
1241 CENTER AVENUE, CHICAGO HEIGHTS, ILLINOIS

PUMPS FOR ABRASIVE AND CORROSIVE APPLICATIONS

If you write maker identify as **IEN - 4714**

If you write maker identify as **IEN - 4715**

Testing Instruments ...VIA GRAYBAR

FREE Buyer's Guide is handy source of information on all instruments

This helpful guide covers what you need to know to select the right G-E testing instrument for the job — instrument features, range, type and application. In addition, to portable recorders, pyrometers, viscosimeters, tachometers and other specialized instruments, this booklet gives special emphasis to the popular line of G-E "Hook-ons".

AK-1A Hook-on Volt-Ammeter . . . accurately measures a-c circuits without interrupting service. 5 current ranges to 750 amperes and 3 voltage ranges to 750 volts with easy switchover. Accuracy to ±3% of full scale value.

AK-2 Hook-on Wattmeter . . . quickly measures a-c power in single- or polyphase circuits. 6 ranges to 300 kw. Accuracy to ±5% of full scale value. Determine power factor with AK-2 and AK-1A in combination.

AK-3 Hook-on Power Factor Meter . . . gives *direct* power factor reading in 100 to 600 volt circuits, currents from 15 to 600 amperes. Accuracy to within 0.05PF.

Graybar Electric Company, Inc. Executive Offices: Graybar Building, 420 Lexington Ave., New York 17, N. Y.

Call Graybar *first* for . . . *Everything Electrical* GraybaR

334-194

If you write maker identify as **IEN - 4716**

UNBRAKO® self-locking CUP POINT

The point that won't work loose

Unique, counterclockwise knurls on the cup point make these UNBRAKO Socket Set Screws self lockers, prevent them from loosening. UNBRAKO Self-Locking Set Screws stay tight even in poorly tapped holes, reduce maintenance costs and cut production losses. Standard sizes—#4 to 1" in a full range of lengths—are available for prompt delivery from your UNBRAKO industrial distributor. Write for UNBRAKO Standards. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

UNBRAKO SOCKET SCREW DIVISION SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-4717

3½" x 2⅝" x 1"
Not much larger than a pack of cigarettes!
Small, lightweight, efficient! Treadlite gives you TWO accurate switching operations activated by ONE treadle. Light pressure requirements prevent fatigue. For your new product planning, specify Linemaster's Treadlite, the compact versatile foot switch housed in a smartly designed casing with slip-proof base, black crackle finish.

T-52-S—Two single pole, double throw switches; operated by one treadle; momentary contact only — **$4.20** Without cord*

Also available: single pole, double throw switch, T-51-S — **$2.95** without cord *
* Cordsets available

Write TODAY for complete information. Send specifications for quotations on your individual tool switch requirements. Over 20 models.

Another Outstanding Product by
LINEMASTER SWITCH CORPORATION
124 PUTNAM ROAD • WOODSTOCK, CONN.

LINEMASTER the leader

If you write maker identify as IEN-4718

This Picture IS WORTH 1000 WORDS! Show

to Your Drivers

WHEN IT COMES TO TRAINING industrial truck operators, one picture is worth a thousand words. Clark's new "Safety Saves" movie is the only driver safety-training film in the materials handling field. It's a 30 minute sound movie, filmed entirely "on-the-job", and it's available to you on a loan basis.

1. "It's fun to watch the scenery; it's safer to watch the road."
2. "All right then . . . you won't make that mistake again!"

You (and your drivers) will see hair-raising examples of how *not* to handle a fork truck, as demonstrated by Willie the Cowboy. After you've seen Willie's way, you'll see the safe, correct way to drive and take care of a truck. To help cut accidents and improve driver performance, *all* your drivers should see "Safety Saves". Use the coupon to indicate when you want it—the only cost to you is return postage.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

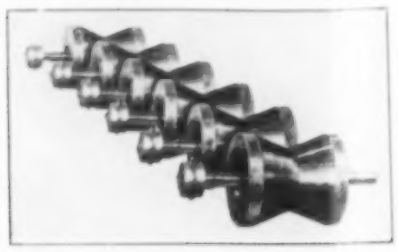
INDUSTRIAL TRUCK DIVISION
CLARK EQUIPMENT COMPANY • Battle Creek 49, Mich.

Send "Safety Saves": Date wanted _____
Alternate dates _____
Name _____
Firm Name _____
Street _____
City _____ Zone _____ State _____

If you write maker identify as IEN-4720

CONVEYING . . Magnetic rolls to suspend and forward ferrous work

Source: DINGS MAGNETIC SEPARATOR CO.
4738-42 W. Electric Ave., Milwaukee 46, Wis.



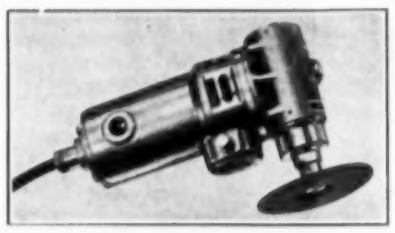
Guaranteed permanent

Permanent magnets are now built into a new line of magnetic rolls, both grooved and plain design, to suspend and forward ferrous work such as pipe, rod, structural shapes, sheets, bar stock. The rolls are made in specified sizes and strengths for given installations. They are recommended to replace magnetic rolls employing coils and electric current. An example is over galvanizing tanks.

If you write maker identify as IEN-4721

GRINDING . . Portable electric tool drives 4 in. disc, weighs 4½ pounds

Source: FRANKLIN BALMER CORP.
Clipper Road, Woodberry, Baltimore 11, Md.



For precision work

Free speed is about 9,000 rpm. for this new Model B-2 design of the company's portable Diskette grinder, previously described IEN-4755-52. The new design includes a collet chuck on the spindle to take an attachment, a universal 110-volt motor, precision ball bearings, cast aluminum intake cover, a double cooling fan. A dust filter cleans the incoming air. Control centers at a double acting pushbutton switch.

If you write maker identify as IEN-4722

BUILDING . . Glass block for skylight diffuses light evenly

Source: PITTSBURGH CORNING CORP.
634 Duquesne Way, Pittsburgh 22, Pa.

Mirror shows top face

Skytrol trade names new light diffusing glass block that measures 12 by 12 by 4 inches. It is designed to stop condensation, glare, and to insulate against heat transmission in skylight installations. Sealed in the block is a fibrous glass screen for insulating and diffusing duty. Internal prisms and the Soft-Lite edge assist in diffusing the light.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4723

—for "INSTRUMENT-QUALITY" AIR

IN COMPRESSED AIR OPERATIONS . . .

HERE'S YOUR ANSWER!

HANKISON
MODEL B-30-D
Condensifilter

Featuring the New-Economical DISPOSABLE FILTER CARTRIDGE

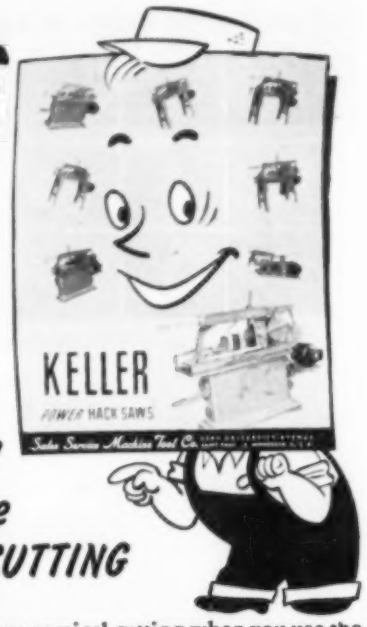
Dehydrate and filter ordinary plant air with a Hankison Model B-30-D Condensifilter for air of "Instrument-Quality." Condenser section removes moisture by lowering dew point of air to within 2 or 3 degrees of cooling water; low cost, disposable filter cartridge with 540 sq. in. of surface area removes even finest dirt particles. Capacity: 30 scfm at 100 psig.

Write for Bulletin B-30-D
For larger capacities, write for data on Model A-100.

HANKISON CORPORATION
350 BILTMORE BUILDING • 951 BANKSVILLE ROAD
PITTSBURGH 16, PENNSYLVANIA

If you write maker identify as IEN-4724

FREE CATALOG helps you select the right POWER HACK SAW . . . for more EFFICIENT CUTTING



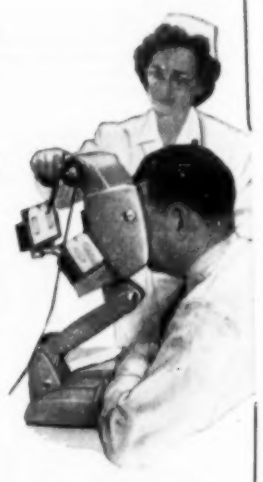
You get better, more economical cutting when you use the right hack saw for the right job. And this *free catalog* gives complete specifications on all 10 Keller Power Hack Saws. Tells special features, capacity, length of stroke, dimensions, motor H.P. and all other facts needed to select the proper saw for cutting everything from thin tubing to heavy 9"x9" steel bars.

Write for free catalog No. 1052 today!

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS
2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN-4725

What your plant can accomplish *with Vision Screening*



We have just made up a report of savings made by 59 plants:

Big savings in *cost of training new employees* (as high as 75%); reduction in *accidents* and *spoilage;* labor *turnover* reduced 30% or more.

Also increased earnings of employees, less absenteeism, and other gains.

Briefly summarized in a Booklet—which we'll be glad to send to any personnel official on request.

KEYSTONE VIEW CO.
Meadville, Penna. Pioneers in Binocular Vision Testing.

KEYSTONE
OCCUPATIONAL VISUAL SERVICE

If you write maker identify as IEN-4726

For faster, simpler moisture measurements

The BECKMAN AQUAMETER

Get greater speed, accuracy, convenience in routine moisture analyses of alcohols, solvents, pharmaceuticals, antibiotics, and other products sold on controlled-moisture basis by using the Beckman Aquameter. Ideal for controlling process-operations where moisture is a key indication!

▸ **Simple, fully automatic** operation eliminates complex, time-consuming problems of other moisture-measurement techniques. Any number of sequential titrations can be completed automatically without re-setting or checking.

▸ **No highly-trained technicians** required. Even inexperienced operators obtain high-precision measurements (titrations reproducible to within ± 0.05 ml.) in minimum time.

▸ **Automatic titration feature** frees operator for other duties between readings (tabulating results, preparing samples, etc.), saving additional time and greatly boosting overall efficiency.

The Beckman Aquameter *applies a new principle to the "dead stop" technique of Karl Fischer methods recommended by U.S.P. It is rugged, dependable, trouble-free. See your nearest Beckman dealer for full details . . . or write for Data File No. 41-5.*

BECKMAN INSTRUMENTS control modern industries

BECKMAN INSTRUMENTS INC.
SOUTH PASADENA 1, CALIFORNIA
Factory Service Branches: Chicago-New York-Los Angeles

Beckman Instruments include: pH Meters and Electrodes — Spectrophotometers — Radioactivity Meters — Special Instruments

If you write maker identify as IEN - 4727

You wouldn't specify Chrome Moly for roofing nails

Why pay for unneeded "specs" in ball bearings?

This free catalog tells you how to cut bearing costs

Replace precision bearings with "commercials" and you save. You can do this under certain conditions, and this catalog tells you what they are. Write for it today.

The oldest, largest manufacturer of "Commercial" Ball Bearings

SCHATZ "Commercial" BALL BEARINGS

THE SCHATZ MANUFACTURING CO. • 6750 Fairview Ave., Poughkeepsie, N. Y.

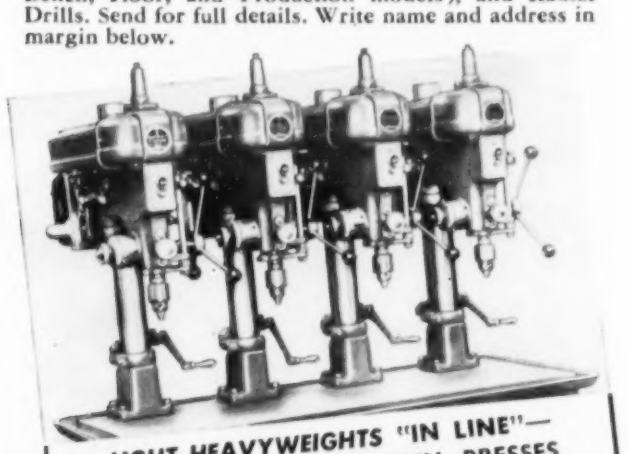
If you write maker identify as IEN - 4728

Design with a $ sign—
(for savings in initial cost)

the new WALKER-TURNER *LIGHT-HEAVYWEIGHT* Drill Presses

An entirely new *class* of machines, Walker-Turner *Light-Heavyweights* give industry the capacity needed for short-run production work without the necessity of heavy investment. Here is design with a *dollar sign,* representing money saved.

Walker-Turner makes 15" and 20" Drill Presses (in Bench, Floor, and Production models), and Radial Drills. Send for full details. Write name and address in margin below.



LIGHT-HEAVYWEIGHTS "IN LINE"—
15" WALKER-TURNER DRILL PRESSES
PRODUCTION MODELS

Designed for fast, accurate drilling at new low levels of investment and production costs. Features calibrated depth indicator. Capacity: 4 Spindle Production Model (shown)—18½" chuck to table, 7½" center of chuck to column. Six spline spindle mounted on 2 ball bearings. 4" and 6" travel. Four speeds — 600, 1250, 2440 and 5000 r.p.m. with 1750 r.p.m. motor. Available in bench, floor, and multi-spindle models (from two to any desired number of spindles)

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES—Hand and Power Feed • RADIAL DRILLS • WOOD and METAL CUTTING BAND SAWS • TILTING ARBOR SAWS • RADIAL SAWS • JIG SAWS • LATHES • SPINDLE SHAPERS • JOINTERS • BELT and DISC SURFACERS • FLEXIBLE SHAFT MACHINES

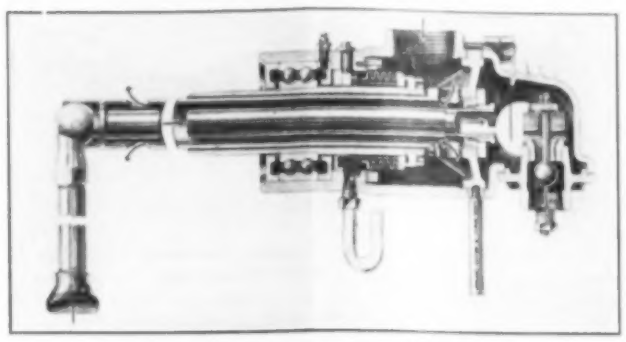
SOLD ONLY THROUGH *TRAINED* INDUSTRIAL DISTRIBUTORS

Use this space
to write for full details and specifications.
Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE 4, Plainfield, N. J.
(Please write your name and address in margin of page)

If you write maker identify as IEN - 4730

PIPE FITTING . . Rotary joint and trap to control condensate drain

Source: VELAN ENGINEERING CO.
3 Exchange Place, Jersey City 2, N. J.



Designed particularly for servicing in place

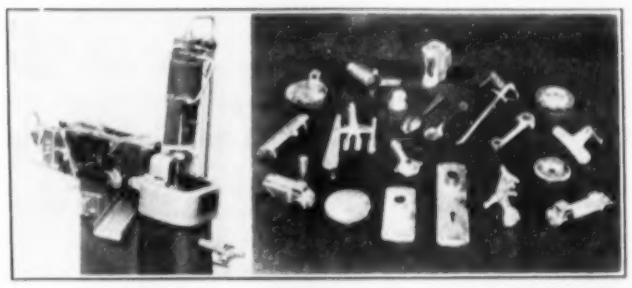
Rotodrain trade names a new assembly of bellows sealed, rotary joint, condensate pick-up and return, in the company's steam trap line. The assembly applies on rotating equipment into which steam is introduced for processing and from which condensate must be drained. The unit assembles on a threaded sleeve and rides on a ball bearing.

Steam is introduced at a top connection. It travels through the angular space formed by a tube inside the rotating tube and the condensate return tube. The steam issues from openings near the end of the tube. Condensate is picked up by a siphon pipe and returned to the rear of the assembly where the steam trap is mounted in a fin equipped housing end. Higher temperature of the steam causes the trap to close and prevent steam loss. When condensate again contacts the trap actuating mechanism it opens and the condensate drains out.

If you write maker identify as IEN - 4731

DIE CASTING . . Injection machine for zinc, rates to 1 pound per shot

Source: DCMT SALES CORP.
162-66 Duane St., New York 13, N. Y.



Company offers technical service

Model IPM/96 is a new assembly in the company's line of air operated impact die casting machines. Construction is characterized by the injection cylinder, which is designed for high speed on the injection stroke without cushioning effect from air trapped beneath it. As a result, there is no throttling effect in the forward movement.

Production runs of 800 to 1,000 shots per hour can be maintained. Single cavity dies can be made from prefabricated die blocks that are machined except for the cavity itself. The machine weighs 470 pounds, It occupies 12 by 36 in. of floor space. It is suited for manufacture of products such as hardware, toys, appliance parts, jewelry, novelties.

All Makers of These And All Other Products Are Listed . . In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4732

THROW THEM AWAY
... and Save Money

Regrinding of carbide tools—even the best—consumes time and money. It can be a major item in over-all tooling costs. But—there's a way to eliminate this expense entirely on many jobs. Here's how.

The "Kendex" tool needs no regrinding! It has an indexable insert that can be discarded when all its multiple cutting edges become dull.

By the time replacement is required (at slight cost compared to that of regrinds), the insert has already paid for itself by increased productivity, and to discard it is economical practice.

Kendex tools are available in three styles—with round, square, or triangular inserts—as illustrated, and in a range of shank sizes—½" to 1" square.

Perhaps you have jobs on which standard Kendex tools will be suitable—or you may be able to use the standard inserts in conjunction with present tooling. If you desire, one of our Tool Engineers will be glad to assist in working out suitable applications of the "Kendex"* principle to your specific machining problems. Kennametal Inc., Latrobe, Pa.

*KENDEX®

KENNAMETAL
CEMENTED CARBIDE TOOLING THAT INCREASES PRODUCTIVITY

If you write maker identify as IEN - 4733

NEW SURFACE FOR OLD FLOORS

"Pre-packaged" flooring makes old surfaces like new

Renew "beat-up" floors and traffic lanes with job-tested Plastic Rock. Bonds to concrete, wood or steel; perfect feather edge; spark-proof, skid-safe wet or dry; dustless, noiseless, easily cleaned; will not splinter, crumble, curl or loosen. Hundreds of tons rolling on steel wheels only pack denser; 10-year-old floors show no wear. Plastic Rock comes complete, packed in handy barrels; materials uniform in quality; no "formulae" or guesswork; simply mix and trowel (average thickness 1/2"). Maintenance crew or contractor can easily apply and have ready for use in 48 hours. Used everywhere by industry, railroads and institutions.

Plastic Rock puts shock-absorbers on your floors.

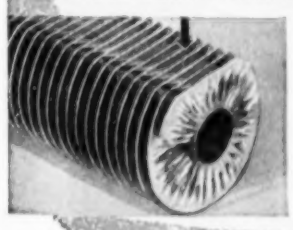
Get free bulletin "Q-4"

UNITED LABORATORIES, INC.
16803 EUCLID AVENUE • CLEVELAND 12, OHIO

If you write maker identify as IEN - 4734

ChemoTec

New Bonding Agents join metal to metal . . . or metal to non-metals . . . without heat . . . without pressure . . . at low cost!



The bonding of "fin-tubes" on heat transfer equipment such as this has up to now presented an almost insurmountable metal-joining problem. Today, the extraordinary thin-flowing characteristics of ChemoTec permit it to penetrate to the desired areas by capillary action. Thus, swift and efficient bonding is obtained . . . with excellent color match . . . with tensile strength that more than meets specifications . . . at substantial savings in time, labor, and materials!

Now, with these amazing new organic bonding agents, you can join similar metals . . . or dissimilar metals . . . or metals to non-metals . . . quickly, easily—at extremely low heat or no heat at all!

What's more, simple contact-pressure is enough to form a *permanent, porosity-free* bond with tensile strength exceeding those of many solders! Now you can design and produce—AT LOW COST—such previously "impossible" combinations as:

- Titanium to Magnesium to Aluminum
- Metal to Glass to Ceramics
- Steel to Rubber to Brass
- Wood to Leather to Copper

—and scores more!

Tensile strengths exceeding 5000 psi. Low labor costs • Excellent capillary action • Free flowing • Low cost • Heat not essential • No annealing of base metal • Perfect heat control • No galvanic action • No porosity • Pressure not essential • Perfect insulation • No corrosion • No flux needed • Economical in mass production

FREE ChemoTec Bonding Agents are available in liquid, paste, powder, or rod form to answer every production need. Send for FREE illustrated literature, technical data, etc., to see how these new developments can help solve YOUR joining headaches . . . today!

ChemoTec **Division**
Dept. IEN-4
EUTECTIC WELDING ALLOYS CORP.
172nd St. & Northern Blvd.
Flushing-New York, N. Y.

If you write maker identify as IEN - 4735

LIGHTEN *clean-up*

Sprinkle Metso 66 on greasy concrete that has been wet. Brush, flush and there—concrete is clean, grease-free, non-slippery.

Stubborn grease and oil in the concrete pores are lifted to the surface. After several Metso washings, clean-up is easier because grease no longer soaks into the concrete.

Send for free sample and instruction folder.

Philadelphia Quartz Company
1131 Public Ledger Bldg., Phila. 6, Pa.

METSO *detergents*

If you write maker identify as IEN - 4736

8 reasons for specifying

Bristol Series 500

recording voltmeters and ammeters

1. Lowest burden of any round-chart recorder on the market.
2. Extremely high torque gradient.
3. Temperature compensated.
4. Shock-proof moving element mounting.
5. Leveling of instrument not critical.
6. Continuously legible recording on sudden changes—up to full scale value.
7. Moving-iron measuring mechanisms, known for high torque.
8. Incorporate design refinements by Bristol engineers for greatest accuracy and ruggedness.

Write for Bulletin E1111.

THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL *The dependable Guidepost of Industry*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 4737

FREE BOOKLETS
TELL ALL ABOUT ALUMINUM WIRE

Get the full facts about what a wonderful job U. S. Rubber Aluminum Wires and Cables are doing for the electrical industry. These two clearly written, informative booklets are packed with data on specifications, standards, photographs showing stripping, joining, soldering—installation facts of all kinds, plus property tables. These booklets are FREE. Send for your copies today!

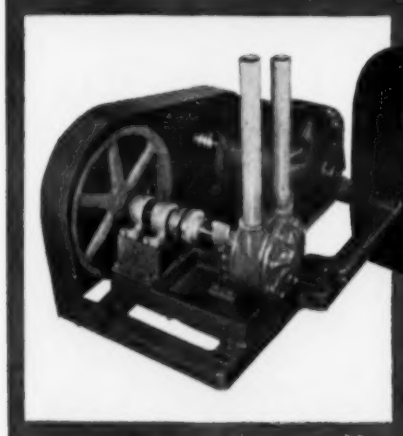
UNITED STATES RUBBER COMPANY

Electrical Wire and Cable Department

ROCKEFELLER CENTER • NEW YORK 20, N. Y.

If you write maker identify as IEN - 4738

New...Versatile!



TUTHILL MULTIPLE V-BELT PUMPING UNIT for Viscous Liquids

Here's the ideal pumping equipment for handling heavy fuel oils and for other non-corrosive viscous liquids in circulating and transfer service.

Tuthill Type SU features wide flexibility along with advantages like these: Simplified motor mounting for motors up to 5 h.p. One point belt tension adjustment. Ball bearing pillow blocks. Pump and jack shaft direct-connected by flexible coupling. Accessible mounting and adjustments. Wide range of pump models and capacities.

DESIGNERS— Pump, jack shaft and pillow blocks available as separate unit for built-in applications.

Write for Catalog No. 107.

TUTHILL PUMP COMPANY

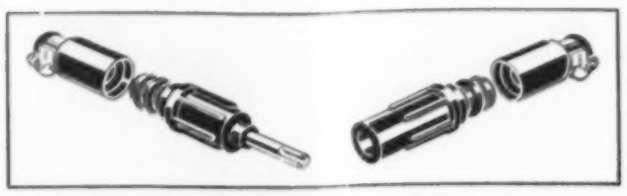
Representative Rotary Pumps Since 1922

828 East 95th Street, Chicago 19, Illinois

If you write maker identify as IEN - 4739

CONNECTOR . . Plug and socket to quickly connect a welding cable

Source: JOY MFG. CO.
253 Oliver Bldg., Dept. W-1, Pittsburgh 22, Pa.



Connector rating is to 600 volts

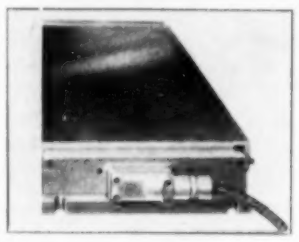
New design, known as Attachable, has been added to the Push-Lock line of welding cable connectors. It employs a socket set screw at the rear to secure the cable end. It is suited for use on lengths of old cable that might otherwise have to be scrapped. Two sizes are for No. 2/0 and 4/0 cable.

The connecting ends are the same as in the previously developed Molded-To-Cable design. The parts are pushed together and twisted to lock in place.

If you write maker identify as IEN - 4740

CHUCK . . Magnetic design, transformer operated, length to 48 in.

Source: SUNDSTRAND MACHINE TOOL CO.
2529-33 Eleventh St., Rockford, Ill.



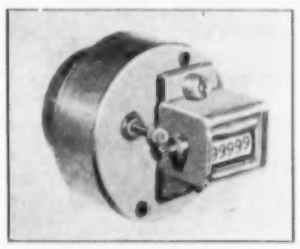
For small thin work

The surface of this new magnetic chuck is made up of 0.05-in. brass strips separated by 0.125-in. mild steel spacers. The assembly is silver brazed and precision finished by grinding. The multiple pole assembly is wound for 12 volts in the smallest 6 by 18-in. size. The other three sizes, ranging from 8 by 24 in. to 12 by 48 in., operate on 24 volts. The company is prepared to supply a transformer for operation on a 110 or 220-volt ac. line.

If you write maker identify as IEN - 4741

TIMING . . Interval counter accumulates hours on closed circuit

Source: BRISTOL MOTOR DIVISION
85 Coulter St., Old Saybrook, Conn.



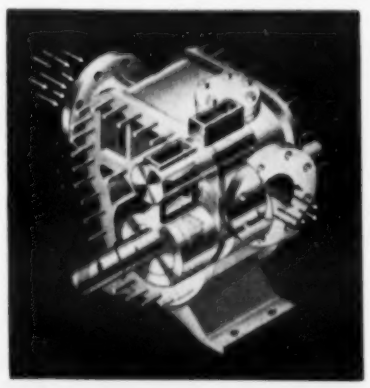
2 by 2½ inches

New assembly of a counter and the company's miniature Circle-B synchronous motor, previously described IEN-7688-51, provides a means to count the number of hours during which a motor driven machine or an electric circuit is closed. The motor operates on 110-volt 60-cycle ac. and connects into the circuit to equipment on which a record is desired. Closing the circuit switch starts the equipment and the counter. Opening the circuit stops both.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4742

HIGHEST GPM* RATING



*GPM equals Gallons Per Manhour . . . how many gallons a pump can handle per manhour of maintenance. By this yardstick, Kinney Model SD Rotating Plunger Pump rates high. For example, a Kinney SD Pump has been handling glue in the plant of a paper specialties company for over 24 years and has been overhauled only once during that period. Kinney SD pumps deliver full rated capacity over long periods of time under the toughest operating conditions. Kinney engineers will be glad to show you facts and figures. Kinney Manufacturing Company, Boston 30, Mass. Manufacturers of Vacuum and Liquid Pumps. Representatives throughout the United States and in foreign countries.

SEND COUPON FOR DETAILS

KINNEY MANUFACTURING COMPANY
3564 Washington Street
Boston 30, Mass.

Please send Bulletin L51 describing Kinney Liquid Pumps. My liquid pumping problem involves:

NAME .....
COMPANY .....
STREET .....
CITY ..... STATE .....

Kinney

If you write maker identify as IEN - 4743

Sheehan's SPECIALIZED CONVEYORS
THREE VARIABLE PLANES!

SPEED PRODUCTION OF HOT OR COLD PARTS

This unusual Metal Belt Conveyor by Sheehan is in wide use in the Automatic Bolt and Nut fabricating industry. It adapts to a wide range of positions for particular jobs.

Small parts can be unloaded into the center of large tote boxes. Two horizontal planes plus the vertical rise can be adjusted to fit production needs.

Heavy duty, high carbon steel woven mesh belt is unaffected by hot forgings! Belt is driven by Sheehan Positive Drive Spiked Pulley. It eliminates any slippage due to heat expansion or lubricants. Top of metal belt at loading end is only 8" from floor.

Efficient design and rugged construction make these conveyors outstanding! There's a Sheehan Conveyor to solve your transfer problem.

Complete literature and specifications on request. Write or wire today!

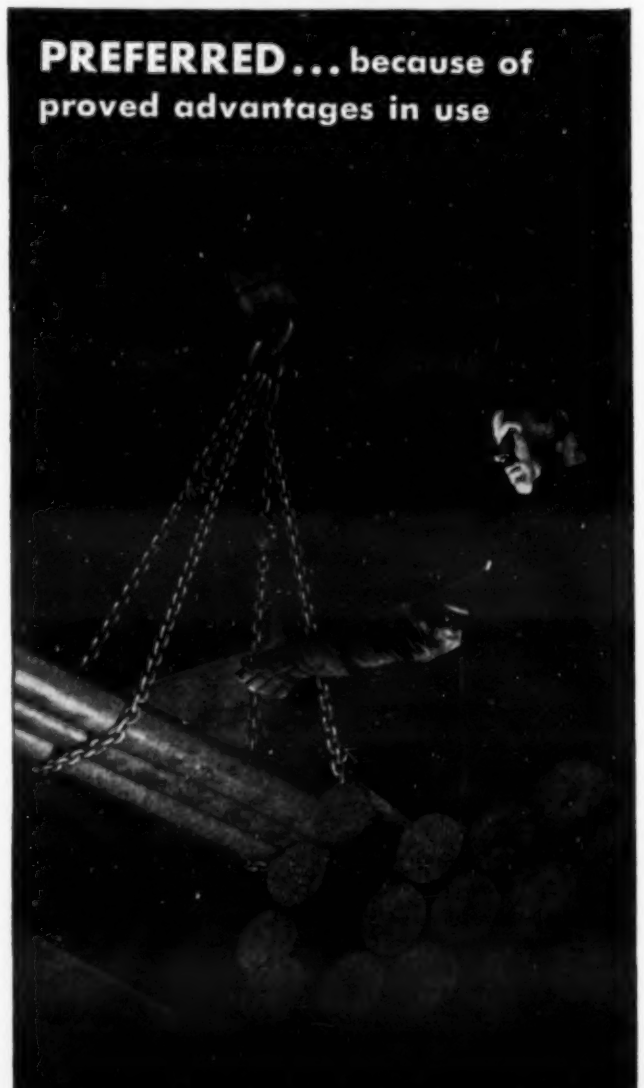
See SHEEHAN'S STANDARD CONVEYORS at the Materials Handling Show, May 18th - 22nd, Convention Hall, Philadelphia
Booth 809

Conveyors
R. T. SHEEHAN CO.
PLYMOUTH, MICH.

If you write maker identify as IEN - 4744

HERC-ALLOY
SLING CHAINS

PREFERRED . . . because of proved advantages in use



Production Executives and Safety Directors look for many things in a sling chain—greatest strength, maximum safety, lighter weight, handling ease, resistance to wear, minimum cost against service life.

Because they found all these advantages in HERC-ALLOY by on-the-job experience, it became a matter of course to prefer and specify HERC-ALLOY Sling Chains.

Write for illustrated Data Book No. 3 which contains helpful information on sling chain selection and use.

COLUMBUS McKINNON CHAIN CORPORATION

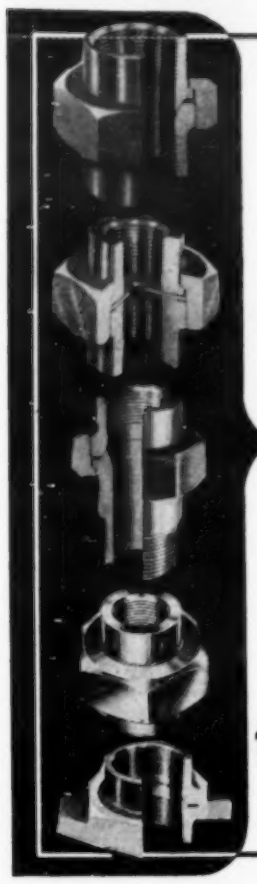
(Affiliated with Chisholm-Moore Hoist Corp.)

GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.

District Offices: New York • Chicago • Cleveland

Other Factories at Angola, N. Y., Dixon, Ill., St. Catharines, Ont., Can., and Johannesburg, South Africa.

If you write maker identify as IEN - 4746



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
50 Mill St. • CATAWISSA, PA.

If you write maker identify as IEN - 4747

25% SAVED!

Packaging costs were reduced by as much as one-fourth when the Fafnir Bearing Co. adopted the Stanley Steel Strapping System.

In almost every type of plant—with almost every type of product—substantial savings are being made in packaging and handling by this cost-cutting system. Put it to work for *you*. Call in the Stanley Packaging and Shipping Engineer. He'll install the Stanley Steel Strapping System on a 30-day trial. There's no obligation. Just mail the coupon below. The Stanley Works, Steel Strapping Division, New Britain, Conn. Branch Offices or Representatives in 32 principal cities.

STANLEY STEEL STRAPPING SYSTEM*

Reg. U.S. Pat. Off.

*A MAN thoroughly experienced in steel strapping applications—the Stanley Packaging and Shipping Engineer.

A METHOD adaptable to any requirement — the Stanley Steel Strapping System,

5th NATIONAL MATERIALS HANDLING EXPOSITION MAY 18-22, 1953 PHILADELPHIA

See us at Booth 1009

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

The Stanley Works, Steel Strapping Division
204 Lake St., New Britain, Conn.

☐ Yes — the 30-day trial interests me. Have the Stanley Packaging and Shipping Engineer call.

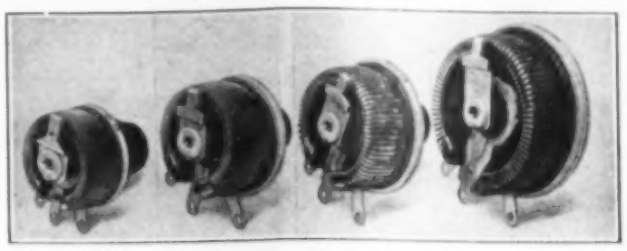
☐ Send me complete information about the Stanley Steel Strapping System.

(Please write name and address in margin of page)

If you write maker identify as IEN - 4749

RHEOSTAT . . Circular design, rates 50 to 150 watts, constant duty

Source: TRU-OHM PRODUCTS
2802 N. Milwaukee Ave., Chicago 18, Ill.



For delivery from stock

Three new sizes, with rating at 75, 100 and 150 watts, have been added to the 50-watt size previously described IEN-7061-52. As in that initial design, the resistance wire is wound toroidally on a ceramic core and is bonded in place with vitreous enamel. A torsion spring assembly maintains positive, constant brush pressure. Shaft rotation is through 300 degrees. Special assemblies are to order.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

"I WISH I HAD"

(Continued from Page 120)

SURPLUS . . "I wish we had a buyer for a Carver laboratory press that we have used for a short time. It rates to 10 ton. It is located in Mineral Wells, Texas." **IEN W-28**

SURPLUS . . "I wish we had a buyer for 6,634 lb. of Hercocel E Formula No. EC-477J-MH Black No. B-23001 Ethyl Cellulose Virgin molding powder. It is in storage in Janesville, Wisconsin." **IEN W-29**

SURPLUS . . "I wish I had a buyer for 96 Lunkenheimer bronze oil cups, Fig. 540, holding ½ oz. of lubricant, also for 975 brass compression grease cups with ¼-in. threaded connection and for 340 No. 263 Billings & Spencer 3/16-in. open end wrenches, located in Hartford, Conn." **IEN W-30**

SURPLUS . . "I wish we had a buyer for 1,000 lb. of 0.004-in. stainless steel wire that is left from a Government contract. It is in stock in Northern New Jersey." **IEN W-31**

SURPLUS . . "I wish we had contact with a buyer for 0.80 carbon spring steel in 100-ft. random coils. The material is blue finish, 48 to 52 on the Rockwell C scale. It measures 0.015 in. in thickness. It is double paper wrapped with No. 1 round edge and is in stock in Philadelphia. Five widths range from 1⅛ to 3 inches. Amounts are from 5,800 to 10,500 pounds." **IEN W-32**

SURPLUS . . "I wish we had a buyer for either or both of two motor-driven Kellogg air compressors. One is rated 7½ and the other 10 cfm. Both are mounted on horizontal 60-gal. tanks. Driving motors rate 1½ and 2 hp. for operation on 110/220 volt 60-cycle ac. Neither compressor has been used. Both are in storage in Hammond, Indiana." **IEN W-33**

If you write maker identify as IEN - 4750

READY-POWER Adds 'GUTS' to Electric Truck Performance

Only Ready-Power Drive gives electric industrial trucks the stamina that means *full power all the time!* Gas-electric and Diesel-electric models are available for all truck sizes.

Your Truck is no Better Than its Power

CONTINUOUS-DUTY POWER UNITS

The READY-POWER Co.

3830 Grand River Ave., Detroit 8, Michigan

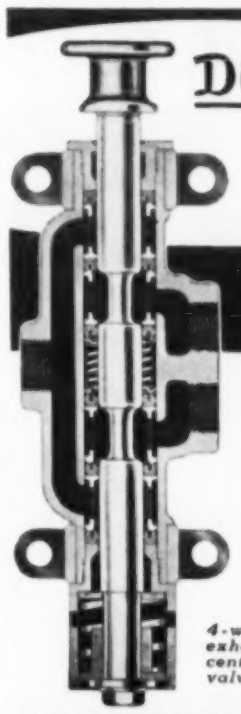
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as IEN - 4751

Diversatility

IN CONTROL OF DOUBLE-ACTING AIR CYLINDERS

Only VALVAIR offers 2 Kinds of Neutral Valves



4-way, piped exhaust, spring-centered neutral valve.

Manual or spring-return to neutral position are the two models by Valvair. Three types: (1) all ports blocked at neutral; (2) inlet and cylinder ports open to pressure, exhaust closed; (3) inlet closed, cylinder ports open to exhaust. 3-way and 4-way. Pipe sizes, 1/4" through 1". Six control assemblies: knob, lever, clevis, treadle, cylinder, solenoid.

★ ★ ★

Get Bulletin "KQ-4."

VALVAIR CORPORATION • Affiliate: Sinclair-Collins Valve Co. 949 Beardsley Avenue • Akron, 11 Ohio

REPRESENTATIVES IN PRINCIPAL CITIES

Rely Upon Valvair

If you write maker identify as IEN - 4752

eye-opener

JOHNSON Rotary Pressure JOINTS

The Johnson Joint has solved many design and production problems as nothing else can. And the Type L, shown above, is helping to fit it into more applications all the time. It has lugs cast on body to permit simple rod support, an arrangement that both simplifies installation and assures proper alignment. Completely packless, self-lubricating and self-adjusting, the Type L Johnson Joint is used on calenders, dryers, mills, etc. — wherever steam or liquids must be admitted to rotating machine parts.

Write for new catalog

The Johnson Corporation

846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 4753

EVEN IF IT RAINS CATS AND DOGS

You'll Have No Need To Worry If Your Roofs Are Protected With

STONHARD ROOF RESURFACERS

Don't wait for leaks! They can be serious and it takes so little to protect against them. STONHARD Liquid ROOF RESURFACER can be applied right from the container to any type roof and you obtain a durable heavy-bodied surface that will not run, crack or sag. Rusted areas are completely covered, nail holes filled! For troublesome spots around skylights, gutters and parapets, use STONHARD Plastic ROOF RESURFACER. It seals all open cracks and provides a tough, elastic repair. Write today for our FREE BOOKLET.

STONHARD COMPANY

Building Maintenance Materials Since 1922

102 Stonhard Bldg., 1306 Spring Garden Street, Phila. 23, Pa.

Yes, I want details on STONHARD Roof Resurfacers: 102/4/53

Name _____

Company _____ Title _____

Address _____

City _____ Zone _____ State _____

If you write maker identify as IEN - 4754

PREVENT ACCIDENTS

DUE TO PUNCTURES

WITH
STEARNS
ROAD MAGNETS

Motorists have fewer punctures, fewer accidents . . . when a Stearns Road Magnet is on the job removing tramp iron from roads, streets and parking lots. As much as 25 pounds of scrap iron has been picked up on a twenty five mile run. Consult Stearns, largest exclusive builder of magnetic equipment.

1005

STEARNS MAGNETS

STEARNS MAGNETIC, INC.
626 SOUTH 28TH STREET, MILWAUKEE 46, WIS.

If you write maker identify as IEN - 4755

STOP ACCIDENTS
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"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

CONTROL . . "I wish I had a source of supply for a circuit closer of some kind to be used on a kitchen ventilating fan. It would turn the fan on when a stove gas burner or an electric heating element was started. It would break the circuit when they were turned off. The arrangement would assure that the fan be in operation when the stove was working and would be shut off when the stove was idle. I am located in Minot, North Dakota." **IEN W-23**

COUPLING . . "I wish we had the name and address of the manufacturer of a flexible shaft coupling known as the Sims Dumbell. It is particularly intended to drive automotive and aircraft magnetos." **IEN W-24**

EDGE HARDENING . . "I wish we had a source of supply for a liquid that could be brushed or sprayed on the edge of cardboard patterns to seal these edges and to make them rigid and resistant to abrasion. We want to bind the edges of the patterns so we can draw around them continuously with a pencil and not fray or wear the edges out of shape. We are located in Lewistown, Pennsylvania." **IEN W-25**

MEASURING . . "I wish we had contact with a source of equipment to mechanically or electrically measure and record lumber widths and lengths of board passing on a table conveyor. Widths range from 3 to 12 in. in multiples of 2 in. starting at 4 inches. Lengths range from 6 to 20 ft. in multiples of 2 feet. Other than thicknesses, boards pass on the conveyor with no uniform pattern. Thus a 1 by 6 by 18 might be followed by a 1 by 10 by 20 and then by a 1 by 6 by 10. We would like to have equipment that would indicate passage of given amounts of a given size of the lumber so these amounts could be read at any time on cumulative dials or recording charts. Located in Washington State." **IEN-W26**

SURPLUS . . "I wish we had a buyer for a Deming turbine pump equipped with a 50-hp., 220-volt, 3-phase motor of vertical hollowshaft design with 20 ft. of 8 by 1½-in. sleeve coupled column and shaft and one 9-stage 12-in. pump assembly to handle 750 gpm. against 162-ft. head. The pump is in storage in Newark, Ohio." **IEN W-27**

(Please turn to Page 119)

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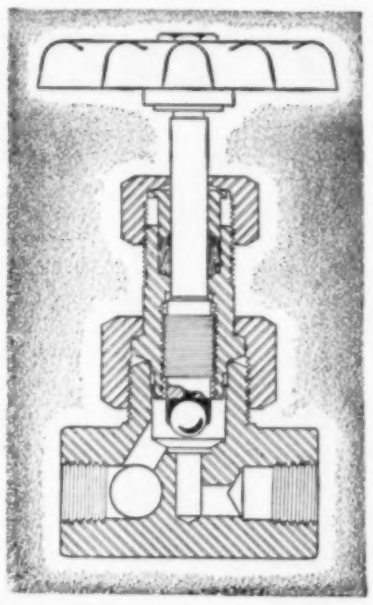

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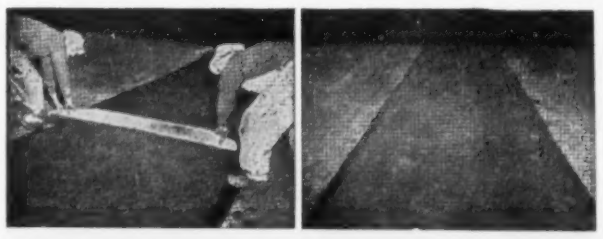

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